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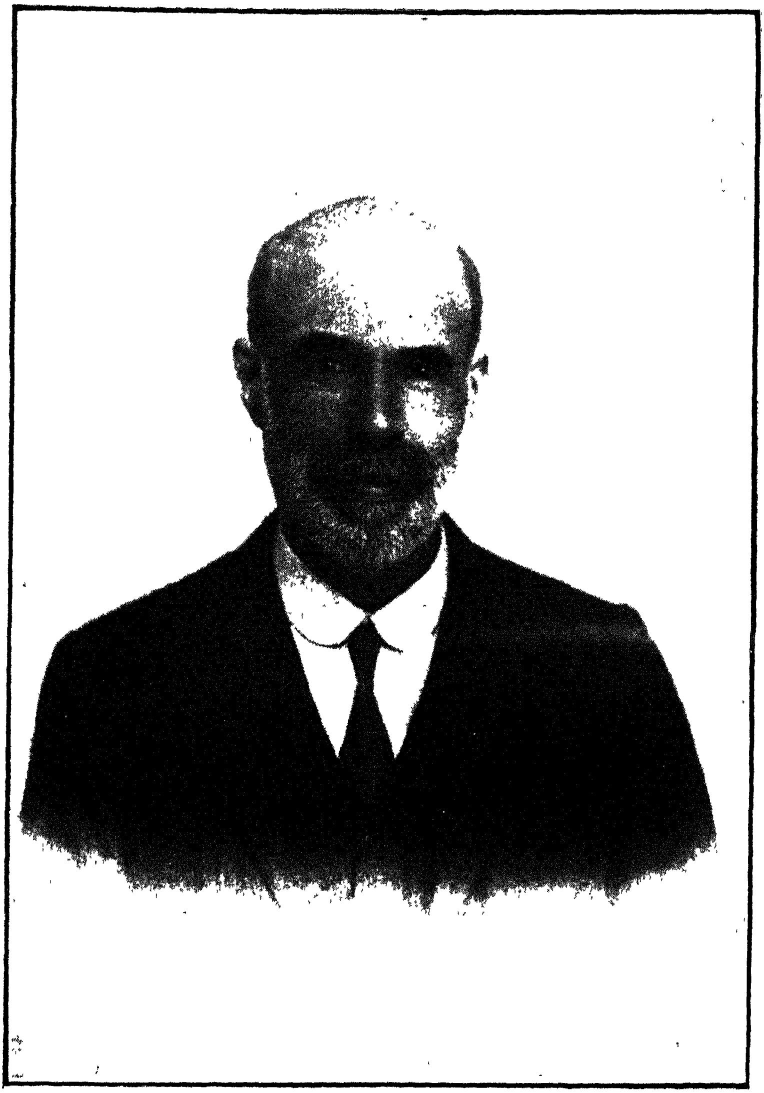

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1914—1923.

INDIAN
JOURNAL OF ECONOMICS
Vol. IV—Part I

ECONOMIC GEOGRAPHY.

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In the outline of the course in Economics in the University of Allahabad the first section is that of Economic Geography. This is a natural introduction to the science, one which associates itself with the facts of the student's daily life and experience. It is only when such association is secured that Economics—and most other subjects—can cease to be a cram subject, and the teacher win for it an abiding interest and full understanding.

Thus, astronomers for many centuries observed the planets, studied their courses, and at last declared that probably Mars at least was inhabited. Mars came within the realm of interest and understanding of all men who had neighbours. Popular imagination was aroused. The atmosphere, the mountains and valleys of Mars were of importance. The man from Mars became the centre of a book, of a play. He was the mouthpiece of the moralist, who found in him a new medium to make us see ourselves as others see us. So in economics, when the student is led to see in the silt of the Ganges as it passes him the economic life of Bengal, or in the cotton carts on the road the old order changing to the commercial agriculture of the new, his economics is linked with life as he knows it, and both are the richer for the union. The purpose of this paper is to outline the meaning of this branch of economics, and to suggest some of the possibilities within its study.

One cord that runs through life has been expressed by Professor Patrick Geddes in the formula :—Place—Work —Folk. The people of the world engage in production for the satisfaction of their wants in certain places. Around each constituent of that elemental fact numerous studies centre; but life comes to them in their interaction. Folk by themselves are the material of the anatomist, the anthropologist. But folk in relation to their work bring into being the problems of labor, of wages, of trade unions, of housing and taxation—the innumerable topics of social economics. Similarly the facts of geography become in their inter-relation with those of economics the environment in which men work, and determining very largely the nature of that work. This inter-relation or inter-action of Place or Environment with Work or Economics is Economic Geography.

It need hardly be demonstrated that the *general* facts of geography influence greatly the life and work of men. Thus the course of the sun profoundly affects economic life. In tropical regions it gives forest and jungle life, the richness of soil with its wonderful procession of vegetation ready for man's satisfaction for the mere taking; and in Arctic regions, the snow and ice fields, with the long months of darkness and then the days of perpetual light. There is an economic life of the summer; another of the winter. Similar is the influence of sea and land. The sea, with its vast expanse of water, its pathless deep, has given us the race of fishermen and of sailors, whose lives and whose work differ widely from those of the cultivators and villagers in the quiet countrysides of the interior of the continents.

So vast are the possibilities within the study of even these general inter-actions of Work and Environment that it is apparent we should be lost in a hopeless maze of facts when considering particular regions or valleys or villages with their own peculiar land formations, qualities and contours, their gifts of sunlight, rain and air, unless we have some method of study applicable to all areas alike. The thread that will guide us is that which has been developed by members of the Regional school—the *river valley.* It is not the river only; but all the natural forces contained within its watersheds. The river valley is the typical geographical unit. Cross India, and you are passing from watershed to watershed, or else down the valley parallel to the watershed. Cross America and your pathway is the same. The river valley with its descent longitudinally from the heights in which the river rises down its long or short course to its mouth, or its descent and ascent from one side of the valley to the other—that is, the river valley in its longitudinal or cross section—is the common geographic form of the earth. The method of studying men working in their river valley environment is as applicable to the valley of the Forth, where it was first applied, as to the vast stretches of the St. Lawrence or the Mississippi or the Ganges. It is as applicable to the tropical river valley of the Amazon as to the great northern basin of the Mackenzie, or the short steep valleys of Japan.

What, then, may we expect to find in a river valley?

Nothing in nature is more sublime than the great mountain ranges, the great watersheds of the valley. The high peaks of Everest hang above the world in an unsolved isolation seemingly defying man. In the regions of unending snow no life exists and can exist except for short periods of time. Nevertheless these snow fields, the seemingly inhospitable citidels of the river region, are of incalculable benefit to man. Man may not go to them, but of a truth the mountain comes to man, in rivers from its melting snows and glaciers; in silt ground out of its rocks by the torrents rushing down it slopes. Profoundly do these gifts of the mountains in their seeming isolation affect the life and work of men far below, fertilizing their fields, even building provinces, as in Bengal, for multitudes who may never see them.

They stand, moreover, as a challenge to man in the barrier they impose to his knowledge, as in Everest; to his trade, as in the Himalayas; to his desire for gold, as in the Rockies in the Yukon. In almost every case, however, men have conquered—struggling over passes, building railways, even motor roads, for the commerce of the nations.

Not all river valleys are bounded by mountains, it is true. Yet is it not true that at the upper limits of the valleys, at the upper watersheds, there is isolation? The roads or the trails may cross the watersheds, or lead along them; but men live farther down in the valley. They sought the watersheds in their wanderings, for there their path was often easiest, their view of pasture lands was widest; but it was in lower levels that they found grazing for their cattle or their sheep; lower still their farm lands. Notice any river valley as you pass down it longitudinally or in cross-section and discover for yourself this consistent order of life.

Thus we come down the river valley into the tree belts, the forests, the home of the lumberman and the hunter. If you have ever lived in the forests with the hunter and his traps, his arrows or his gun, tracked with him the wild animals, dependent upon them for food, upon their skins for articles of exchange; or if you have ever gone into the logging camps and have come out with the logs rafting them down the swollen torrents of spring time to the sawmills,—you will realize that here is a life far different from that of the factory worker of the distant towns. Down in these mountain foothills, in the broken country before the valley widens out into its upland plains, are the mining districts. There you will find much of the coal, of the iron, as in the coal fields of Raniganj and Jherria;

and again you have an economic life different from that of the trapper or the lumberman.

Let us come out now onto the upland plains. Is there a differing type of economic life in these comparatively treeless stretches of thin grass lands? It is, is it not, the land of the shepherds, of the herdsmen, of the horse ranchers. Differing in different valleys there is the common economic type of the dweller. It is the home, likewise, of the cattle thief or the horse thief; of the wandering criminal tribes, who live by raids upon their wealthier settled and less warlike brethren of the farm lands. Nature there and the thin soil above the rocks gives sparingly of her vegetation. To accumulate it for man's use his own efforts in agriculture would be insufficient. Therefore he drives his cattle over wide stretches; the grass of many bighas becomes concentrated in them; and from them he has his food in milk or in flesh; and wool or hair for clothing or for tents.

Further down the valleys in the deeper soil, the greater moisture, we have the cultivators, the agriculturalists. The association of geographic conditions with agricultural life through soil formation, vegetation types, weather conditions scarcely needs demonstration. In a certain district in Western Canada there is a belt of land between two main roads, about a mile wide and ten miles long. The soil is excellent, but year after year hail destroyed the crops, and as a result the type of agriculture there gradually changed. On either side of the belt the farmers concentrate on grain. Within the belt they raise pigs and cattle, feeding them on the hailed-out grain. Thus the type of farming changed from a more or less self-sufficing grain economy, to a commercial dairy and meat economy.

Let us examine more closely the inter-relation of Work or Economics and Place or Environment in the low lands of the river valleys. A reference to a map of the world's population will show that the most densely populated areas are: the Atlantic seaboard of America from Boston and Baltimore; England; Belgium and Flanders; Italy; the Gangetic valley; eastern China; and Japan. The centres of wheat cultivation are: central United States and Canada; eastern Washington and Oregon; central Argentina; North-western Europe; the Mediterranean countries; Southern Russia and the Danube valley; north-western India; and southern Australia. The centres of rice cultivation, on the other hand, are: Japan and the river deltas of the Yangtse, the Ganges, the Nile, the Po and the Mississippi.

The maps of the distribution of wheat and rice in India show that the cultivation of the former is centred largely in the upper valley of the Ganges, in the Punjab, and in the Plateaus of Central India and the Central Provinces. The coast district and deltas have practically none. Rice, however, is located chiefly in the lower Ganges valley and delta, and the irrigated districts of the eastern and western coasts in the very districts where there is the greatest density of population.

Keeping in mind these facts can we say that it is a mere accident that the great wheat fields of the world are thinly populated, whereas the rice regions of the Orient contain its densest population.? Is it an accident that density and rice go together in India? Is it an accident that the greatest industrial centres are associated with the wheat eaters rather than the rice eaters? Or is there here again an interplay of Environment and Work?

Wheat grows in many climates, in almost any soil with varying rainfall and with but little cultivation after the seed is once sown. It is, therefore, eminently suited to extensive agriculture, particularly in regions of moderate rainfall. The greater the amount of land which the agriculturalist can prepare and sow, the greater will be his crop at the harvest. Therefore his energies turn to the extensive breaking in of land, leading inevitably to improved ploughing and improved machinery for seeding. The extended fields of hundreds of acres cannot be successfully hand cut, and so we have the modern reaper and thresher.

Men with machines however, produce far more then is necessary for their own consumption. This surplus they exchange with the cities, providing the food for the industrial classes who carry their goods. Thus the geographic conditions under which wheat and its allied grains are produced, and the peculiarities of those grains themselves are at the basis of the great transport systems of the world and of the industrial life of the industrial centres of the West.

Rice, on the other hand, demands a moist climate of even temperature; and its deficiency in proteins gives it the necessary keeping qualities in such conditions. That same deficiency accounts for the consumption of fish and the importance of the fisherman in rice countries. Rice, moreover, needs irrigation, and therefore certain conditions of land and river. It needs constant cultivation, and accordingly is unsuited for extensive cultivation. Even under intensive cultivation in the small rich fields of the deltas, it requires a large labor supply, with a resultant density of population far exceeding that of the wheat lands. This population, however, it is able to support because of its high yield per acre, supplemented by the fish of the numerous waterways throughout its region. Thus in the rice regions a different type of economic life results—a Communal organization unnecessary in the wheat lands; a people to whom every plant and every inch of ground are valuable; a people, therefore, who are students of plant life, insistent on accurate records of land rights. It is not an accident that the Bengali is the Indian type of gardener or botanist, of the mathematician and lawyer.

Thus, down our river valley we come at last to its mouth, to its quiet running stream carrying upon it, it may be, the commerce of the valley to distant lands or to distant parts of the coast. In its mouth or its bays is the fisherman whose work is so distinct from that of hunter or miner or shepherd or farmer that it need not here be dwelt upon.

It should not be forgotten that in the valley are villages and towns, their location determined ultimately by the geographical forces of the valley. Some are built at the river fords or river junctions, such as Indore and Allahabad. Others are on heights easily defended, such as Bikaner. Still others are the distributing centres at the head of a number of minor valleys, such as Dehra Dun. Some are commercial centres determined by the river depths, such as Mirzapore, where formerly the large Ganges boats discharged their cargoes, leaving them to be carried on by the smaller boats of the upper valley, or by ox or camel into central India and the Central Provinces. Reference must also be made to the apparent obstacles placed in many river valleys to the work of men. In the great valley of the St. Lawrence, for example, there are the Niagara Falls. As one gazes upon them one realizes something of the feelings of the first travellers who confronted them and their swirling rapids below. Here, surely, was a barrier to communications and to transport! And yet man has conquered the barrier. Not only are large lake steamers locked through the Welland canal; not only has engineering skill succeeded in spanning the river chasm with bridges, connecting the coal fields of the United States with the fuelless stretches of Ontario, making life and work there possible in winter; but the Falls themselves have become the greatest servant of the country. From the power houses below them run the cables carrying electricity to hundreds of cities and towns and farmers' houses in the country, operating their factories and tram systems, lighting their streets and houses, pumping their water, running their farm machinery, and even in places milking their cows.

It is this great contribution of Niagara which has given hope to some economists in India, who have witnessed with dismay the breaking down of the moral control of the castes over the industrial population of the cities, the degeneracy following upon the localization of industries through the utilization of coal and steam for power. Since electricity can be applied directly to the individual machines it is no longer necessary to group them all in one place. The economic solution of India to many of us appears to be in the utilization of her water resources for the development of electrical power; in the distribution of that power to the villages; in the organization of industry so that one process would be completed in one village, another in another, with the final assembling in a central place. Thus could the industrially inclined live under the old moral and social safeguards, free from the degenerating influences of the slum life of the cities.

Most imperfectly some aspects of Economic Geography have been touched upon in this paper. It may prove sufficient to indicate the broad characteristics of a river valley and some of the possibilities in its study from its hunters in its upper stretches through its lumbermen, miners, herdsmen, agriculturalists, gardeners, to its fishermen and sailors at its mouth. This, I submit, is the unit of study in this important link in the chain of life represented by our formula: Place—Work—Folk.

THE IMPERIAL FOREST RESEARCH INSTITUTE, DEHRA DUN

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The varied character of forestry is soon appreciated when the visitor sees the buildings of the Institute in their spacious grounds. The work carried on therein falls into five main divisions: (1) Botanical, (2) Zoological, (3) Chemical, (4) Sylvicultural and (5) Economic. The first three are concerned with forest problems related to their respective sciences: such as the effects of climate on plant growth, and the classification of plants; the study of insect pests of the forest; and the chemical examination of the resins, oils and other substances which are obtained from the fruits, leaves and roots of trees. The Sylvicultural and Economic branches deal with the more directly practical questions arising in the management of forests and utilization of their products. Sylviculture is the art of planting and growing trees; and in forestry, unlike landscape gardening, the aim is not beauty but profit. An immense field of research opens out in finding the trees which can be most profitably grown in the differing soils and climates throughout this great country, in the methods of planting and care of growth, in avoiding destruction from disease, drought or fire. So many factors have to be taken into consideration: the rate of growth of the trees, the value of loppings or seeds and other by-products during growth and at the time of felling, the quality and probable price of the timber on the market and the cost of getting it there. In all his observations and experiments the forester is at a great disadvantage as compared with his brother engaged in the improvement of agriculture from the mere fact that trees

The Economic Branch of the Forest Research Institute is naturally that which appeals most directly to the economist, for it embraces all those technical, commercial and economic studies which are directed to discovering the most advantageous and profitable uses of all kinds of forest products and how to prepare them for the market and to assist the trade therein by testing and standardizing, by discovering methods of most cheaply collecting the produce from the forests, and how to prevent adulteration.

At present the Economic Branch of the Forest Research Institute is divided into a number of Sections. The first is that of Wood Technology which studies the qualities and properties of all the varied kinds of timber grown in India. The ground floor of the main building of the Research Institute is largely occupied by a museum, which is open to the public every day of the week from 10 to 4 except Saturdays and Sundays. One-half of this museum contains a wonderful collection of specimens of Indian timbers, which is the basis of the work of this section. On a series of shelves are to be seen 3,000 blocks of wood, each one from a different kind of tree. Each block is carefully labelled with its Latin and vernacular name, and a number which enables the locality of its occurrence to be found in the catalog. The blocks are arranged according to the natural orders of plants; and the collection is in constant use as an aid to identifying samples of timber which are constantly being received from all parts of India and Burma. In the same room are to be seen many large and beautifully polished slabs of timber of all kinds which are in commercial use and others which the Institute has proved to be suitable, but which are not yet known to trade. Polished panels and veneer models are also exhibited to show the beautiful effects obtainable by cutting timber in various ways relatively to the grain and heart of the tree.

The "Minor Forest Products" constitute another and very important section of the Economic Branch; and one half of the Museum is devoted to them. They include roots, bark, fruits, seeds, and leaves of trees; and all parts of numerous smaller plants, which are found growing wild. This part of the Museum is of extreme interest to the economist because the products are arranged according to the industries, or the type of finished goods to which they furnish raw material. For instance, we find samples of various kinds of paper made in India with specimens of liquid "half stuff" (boiled or digested grass or fibre) and paper pulp. Alongside them are placed for comparison paper pulps from various materials in other parts of the world. There are several cases devoted to fibres of which there is, to a layman, a bewildering variety, used or usable for many purposes such as making rope and string, and hence fishing nets; a special very strong fibre for elephant ropes; and stiff fibres for brushes. Beside the fibres we have the "flosses"—kapok and many other tree cottons; and further on we come to the resins and their products. The resin of *chir* pine produces on distillation turpentine and rosin; and the Forest Departments of the United Provincn; and Punjab have now made this a big industry. The rosin is used for a host of purposes—as a constituent of soap, for sizing cloth and paper, for making varnish and polishes and many more. In other cases may be seen complete exhibits of materials in various stages of manufacture up to the finished product in the following industries: lac, for polishes, sealing wax and lacquered wood articles; sandal wood for oil and carved ornaments; bobbin-making for cotton mills; lead pencil making; manufactures of matches. There is also an exhibit of barks, fruits, etc, used in tanning and of tannin extracts made therefrom with various specimens of leather tanned thereby. Another case contains a series of vegetable dyes, now of little economic value with the return of aniline dyes to the

Indian market. Besides the largescale industries, a number of cottage industries using forest materials are represented.

There are samples of innumerable roots and fruits used for medicinal purposes; but further research in this line has been transferred to the special Committee on Indian *materia medica* recently formed. An interesting exhibit is a set of some fifty or sixty varieties of edible seeds, fruits, stems and roots of plants, which are eaten by villagers in forest areas in times of famine. Though poor in nourishment they prevent starvation.

Particularly important are the oil seeds which are fully representated here so far as they come from trees and wild plants. The various oils expressed or diluted therefrom are shown in rows of bottles. Their uses are legion. Many are edible, and are used as oil or as an adulterant of ghi; several are used for burning; and many are exported for manufacture of soap, candles, and margarine (artificial butter). In a case containing "Distillation products" we find oils of eucalyptus, citronella and of pine-needles; camphor oil and crystals, and a number of perfumes. Some of the sweet smelling oils useless for any other purpose are exported for making perfumed soaps.

One of the most recent developments at the Forest Institute is the establishing of a special laboratory for the purposes of conducting tests in the strength of hardness of Indian timbers. It will be readily understood that the work of the Forest Department in attempting to bring new Indian timbers widely into use in India for constructional purposes has been greatly hampered by the fact that no data has been accumulated either by experience or experiments as to the elasticity and resisting powers of the different timbers in various sections. The testing of timbers on a scientific basis has been carried further in America than anywhere else, and Government took the wise step of engaging the services of an expert in the testing of timber from Canada. He has lately completed the equipment of a fine laboratory with the latest testing machinery; and the results of this work should gradually become of great industrial importance to India.

The Forest Research Institute had already some years ago outgrown its present premises; and with a view to its development and expansion plans were prepared for new buildings on a large scale. A large new site was acquired at Dehra Dun, a mile or so further from the town. The completion of the new Institute is likely to be delayed by financial stringency; but there can be little doubt that such expenditure is of a productive character, and is fully justified, although the return is not fully available for many years. The only objection to large and expensive new buildings for the Research Institute at Dehra Dun lies in the fact that the location is so far removed from the great commercial centres of India. Very little is known of this Institude and its work in the Presidency towns or even in Cawnpore. Its great muscum, which is of much commercial interest, is visited by too few people. Furthermore, commercial men have not the opportunity of personal interviews with the officers of the Institute. There are great potentialities of further development in the Indian forest products; and it is most desirable in some way or other to bring information about them to the attention of Indian commercial men. The site at Dehra Dun was chosen because the mild climate and good soil make it suitable for growing trees and plants from all parts of India; but the question of establishing a muscum of forest products in Calcutta or Bombay ought to receive serious consideration.

THE THEORY OF DISTRIBUTION.

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I.

INTRODUCTORY

There are three problems in economics to which the term "distribution" is applied. One is the problem of the physical distribution to users of concrete goods—Commercial Distribution. With Commercial Distribution this article is not concerned.

A second problem termed "distribution" is the study of the wealth and income of the individuals in society. Some are wealthy, some are poor. What are the extremes in the size of family and individual incomes? Does a small percentage of the population own a large percentage of the property? What is the average individual or family income, and what proportion of the population has larger incomes and what proportion smaller incomes than the average? This problem we may best call the Personal Distribution of Wealth and Income.

The third problem in economics to which the term "distribution" is applied we may call Factoral Distribution. Factoral Distribution is a study of the distribution of the proceeds of industry, or of the value of the industrial product, among the various factors of production. Suppose a cotton mill has an output of five lakhs' worth of goods annually. The goods are produced by the utilization (or, to use impersonal terms, the co-operation) of such diverse elements as land, durable producers' goods like buildings and machinery, non-durable producers' goods such as fuel and raw materials, unspecialized purchasing power or working capital (used now in buying raw materials or fuel, now in paying wages and again in something else), and labor. Then too, some persons must direct the process and some must take the risks that the utilization of all these factors will be in vain—that the resulting product will be less valuable than might have been obtained by the utilization of the factors in some other way. How much of the value of the cotton goods, of the five lakhs annually, goes as remuneration to the labor utilized? How much for the services of the land, of the machines, of the unspecialized purchasing power, or working capital? How much for guidance or management, and how much as a remuneration for undertaking the risks and uncertainties of the situation? Are there any general laws underlying this factoral distribution? Such is the third problem of "distribution."

That close relationship exists between Personal Distribution and Factoral Distribution, as we shall hereafter refer to these two distributive problems, is evident. But that they are distinct problems is no less obvious. Thus the incomes of different classes of the population is closely bound up with their occupations—as landholders, building owners, capital furnishers or creditors, laborers, managers or uncertainty-bearers. The income to landholders must be the amount paid by industry for the use of land, and that to laborers the amount paid as wages (inclusive, of course, of rent or wages accruing to oneself when he utilizes his own labor or land). On the other hand, Factoral Distribution is not concerned with how many landlords there are—whether the amount paid for the services of the land is divided among fifty or fifty thousand persons. Again, one person may receive rent from land, interest on bonds he holds and wages for his labour—a fact which is of importance in considering Personal Distribution but has nothing to do with Factoral Distribution. Moreover, there is a great secondary distribution of incomes apart from their reception from industry—through the family, religious organisations, friendly societies, insurance companies, charity, etc. The difference in point of view between Personal Distribution and Factoral Distribution is also important. The destribution of income among the population is a sociological study—tinged heavily with ideas of economic welfare. The distribution of the value-proceeds of industry to the suppliers of the factors of production is limited to problems of value—to economics as a science of price.

Much confusion in economic theory has been the result of failure to keep these two points of view separated. Thus the factors of prodution have usually been classified, not according to function, nor according to the way in which they are remunerated, but according to the social classes of income receivers. The classicists in political economy gave land, capital and labour as the three factors in production because they saw in society three great socio-economic classes—landlords, capitalist-entrepreneurs, and laborers. When in the latter part of the nineteenth century, there began to be a marked separation between capitalists or owners, and entrepreneurs or managers and risk-takers, the neo-classicists separated organisation and entrepreneurship from capital and made the former a separate factor of production." [1] This led to the clear distinction between interest and profits—which had previously been hopelessly confused in English political economy. Recently Professor Pigou[2] has argued that uncertainty-bearing and waiting ought to be considered separate factors of production because they are now undertaken by different groups of people. From the point of view of factoral distribution the distinction might have been made a century ago. But the most serious result of the confusion of Personal Distribution with Factoral Distribution has been in the rigid and false distinction between rent and interest which followed from the identification of land with natural resources and of capital with man-made resources ("goods make by men set aside for further production"). For while "nature-made resources" and "man-made resources" are useful concepts in reference to our ideals of property, and hence useful also in reference to classes of income receivers, and therefore useful in studying Personal Distribution, they only confuse the situation when applied to Factoral Distribution. In Factoral Distribution these concepts, as we shall see, should be abandoned and the concepts of relative durability and relative replaceability or duplicability substituted. It is the same error which resulted in the strange doctrine that rent does not, while interest and wages do, enter into the cost of production. That this erroneous doctrine in a modified form still persists in high economic circles is evident from the phrase in the prospectus of the Allahabad University for the B. A. examination[1]: "Rent not a price-determining cost of production."

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[1] See Marshall, *Principles of Economics*, 6th. ed., p. 138-9. Marshall calls land, labor and capital (and for some purposes organisation) "agents of production," and apparently distinguishes this from the term "factor of production." (Ibid, p. 339). His theory of distribution in Book VI is ostensibly applied to the distribution of the national income among the "agents of production", for he says (page 505): "We shall turn to a general view of the causes which fix the broad lines of distribution of the national income between labor, and the owners of capital and land." .This and the following few pages reviewing the theories of distribution of the Physiocrats, Malthus, Ricardo and Smith, obviously refers more to the distribution of income among the classes of the population than to the factors of production, on account of the close adhesion to the problem of distribution among these specified "agents of production." But on page 521, and implicitly on page 406 (3) and page 661 (2) he abandons this viewpoint and his own definition of "agents of production" and passes to the viewpoint of strict factcral distribution. "Every agent of production, land, machinery, skilled labor, unskilled labor, etc., tends to be applied in production as for as it profitably can be." On page 410 he speaks of iron, or any other agent of production. In fact, the terminology is hopelessly confused.

[2] *Economics of Welfare*, Appendix I, p. 915-24.

It is the purpose of this and succeeding articles to present separately the Theory of Factoral Distribution and the Theory of Personal Distribution of Wealth and Income. In presenting the Theory of Factoral Distribution, which we shall do first, we shall regard rent, not as the landlord's income, but as payment for the use of land; interest not as the capitalist's income, but as payment for the use of funds ; and so with all payments for the use of factors of production. It is rent and interest, and profits and wages as such with which we are here concerned—not whether the persons receiving them are rich or poor. In fact, we shall, throughout much of the discussion, omit reference to the agents of production and speak of rent, for instance, as the payment to the land, instead of as payment to the landlord.

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[1] Prospectus for 1924, p. 18.

II.

FACTORAL DISTRIBUTION AND THE COST OF PRODUCTION

The problem of factoral distribution is coincident with that of value and also that of costs. The factors of production are bargained for in the market along with consumers' goods and the payments therefor are governed by the same laws of supply and demand that govern the payments for consumers' goods. An analysis of the distributive shares accruing to factors of production and of the laws governing the size of these shares is an analysis of costs as well. Payments for rent, interest, and so forth, are at the same time costs and distributive shares—appearing to the entrepreneur as costs while the economist views them as distributive shares.

If, then, we begin with an analysis of costs, we shall only be going to the other side of the same problem, and we are likely to find the approach easier. We must assume, of course, to start with, free competition—that there is no monopoly of any sort of any factor of production, and that all entrepreneurs have equal chances of bidding for each factor. To be sure, we will have to note here and there that such is not actually the case, and we shall find that the fact that it is not has a great bearing upon the distributive shares, particularly upon profits. Let us begin, therefore, by finding an exact, comprehensible meaning of the term Cost of Production. To do this we must go back to the fundamentals of the productive situation—to the concept of Real Cost of Production.

It would be illogical to talk about the Real Cost of Production of a commodity which cannot be reproduced or duplicated, or made available for use. Thus it would be idle to talk about the Real Cost of Production of a meteorite, if we meant the bringing into existence upon the earth of one—because from the human point of view the resistance to "the bringing into existence upon the earth" is beyond breaking. But if you are a man hunting meteorites for museums and laboratories you might conceivably speak of the cost of production of meteorites. What would be the Real Cost of Production in such a case? Nothing but a sort of sum-total of all the various resistances to the bringing-to-the-place-where-wanted of the meteorites. If this involved nothing but the sending of a man to search and to carry the meteorites back we might express the cost in terms of days' labour, or of human effort expended. But if in the same number of days that it takes to "produce" a meteorite, the same labourer could produce ten maunds of wheat, we might also express the cost of the meteorite as ten maunds of wheat. The Real Cost is what one might have had by choosing a different line of action—that is, one's leisure if he prrefered it, or the absence of exertion, or wheat, or fish, or what not. The alternative product, the displaced opportunity—this is the essence of Real Cost of Production.

Money Cost of Production, or Cost of Production, is the money value of this alternative product or displaced opportunity [1]. To the business man Cost of Production is a summary of the various necessary outlays to procure factors of production, or, if he himself furnishes the factors, the income which he might have obtained by an alternative use.

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[1] Cf. Wicksteed, *Commonsense of Political Economy*, p. 380, where the following statement is made: "The 'cost of production' of any one thing is only another name for the marginal signifieance of certain other things, which have been foregone for its sake."

What are these necessary outlays—the various items which, if any particular entrepreneur or business unit is to utilize and bring forth a product, must be remunerated? Or to put the same question in its other form—what are the valuable, or economic, factors of production? (There may, of course, be elements which are technologically necessary factors of production, e. g. air, which are free goods, and hence disregarded in reckoning the economic factors of production). In seeking an answer to this question the following observations must be clearly borne in mind.

First: the different lines of necessary outlay vary according to the product desired and the economic situation. The lawyer selling his legal services has quite a different line of expense then the ryot selling cotton or wheat, or the bazaar merchant selling cloth. This means that, in fact, the factors for which remuneration must be made, while limited and definite in any one business [2], are, in the aggregate innumerable. Thus any list we make of the factors of production is in the nature of a grouping of individual factors, or a classification of them.

Second: with certain factors of production, the units vary greatly from each other, and we might quite properly regard each variety as a different factor of production. There are wheat-growing lands, cotton-growing lands, hillsides, valleys, blacksoiled land, red-soiled land; there are buildings and machinery of various kinds in endless profusion. Some of these are physically very much alike—we might classify them by appearance. Some are similar in origin, and we might classify them accordingly. Some are alike in use which are very different in appearance, physical character or origin, as, for instance, a typewriter and a scribe. Thus a classification according

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[1] Even here there is a wide variety of possible factors for each of which remuneration must be paid if it is used. Limitation and definiteness are attributes applicable only to those actually utilized.

to function would be very different than a classification according to appearance or origin. In short, it cannot be over emphasised that any classification we make of the factors of production is only an artificial grouping made in accordance with our needs and conveniences. As Marshall remarks, "We may then arrange the things that are required for making a commodity into whatever groups are convenient, and call them its factors of production."[1]

Third: Whatever list we make of the factors of production must include all necessary outlays—all outlays, which, if not made, result in a suspension of, or refrainment from, production. To use the other set of terms, the list should include all the resistences which must be overcome by a payment out of the value-proceeds. The question, What are the factors of production? is thus modified into the question, What classification of the factors of production is most advantageous to us as students of economics, and specially of the theory of factoral distribution? Reminding the reader again that our problem is to understand the reasons for outlays and the size thereof made in the process of production, I submit that the best classification is that which, *first*, best discloses the essential nature behind each sort of outlay—that is, best reveals the kind of service received by the entrepreneur for each outlay, and *second*, most closely approaches business usage.

We have mentioned the inadequacy in relation to factoral distribution of the traditional classification of the factors of production as land, capital and labor, or as land, capital, labor and organisation.[2] Let us now examine the reasons for this inadequacy. They are as follows:

First. In spite of the statement that these factors exhaust the whole of the value-proceeds,[1] there are necessary outlays which do not fit into this category. Taxes, franchise-payments, royalties, advertising expenses, insurance premiums—are these payments for the use of land, capital, labour or organisation?[2]

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[1] *Principles of Economics*, 6th ed., p. 339.

[2] See Wicksteed, *Commonsense of Political Economy*, p. 365.

Second. The distinction between land and capital as nature-made and man-made resources[3] is only indirectly relevent to the problem of factoral distribution. We recall that our problem is why payments must be made, and what determines their size, for the use of land, buildings and other factors of production. With this the origin of the factors has nothing to do. Were a completely finished office building to fall down out of the skies and drop in a suitable location in Calcutta, there is no reason to suppose that office rent would be any different than though it were erected by a group of capitalists. Nor would there be any reason for calling the rent accruing to this building really and truly rent, and that to other buildings quasi-rent, but really interest. The phenomena of land-rent in that part of Netherlands which has been reclaimed from the sea (which is as truly "made by man" as a wooden box) is no different than that farther inland.[4]

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[1] "Among them wages, interest or rent, and profits exhaust the entire social income." Seligman, *Principles of Economics*, p. 352.

[2] See Davenport, *Economics of Enterprise*, p. 158-9.

[3] "The term land being taken to include free gifts of nature....which yield income." Marshall, Principles, 6th ed., p. 78.

"By land is meant the material and the forces which Nature gives freely for man's aid, in land and water, in air and light and heat." *Ibid.*, p. 138.

"By capital is meant all stored-up provision for the production of material goods, and for the attainment of those benefits which are commonly reckoned as part of income." *Ibid.*, p. 139.

[4] For certain purposes, of course, this distinction between nature-made and man-made resources is of great significance, as, e.g., the ethics of the personal distribution of income. In determining who ought, in distributive justice, to receive the payment for the use of a factor of production, we need this conception. But where there are no hindrances to competition this distinction has nothing to do with the amount of the payment—which is the problem of factoral distribution.

Third. The traditional classification does not indicate with sufficient clearness the distinguishing qualities of each factor of production. Professor Pigou's suggestion that uncertainty bearing and waiting should be separated is evidence of confusion in one element. Again, the true nature of interest as time-discount is obscured and confused with instrument-hires.

Fourth. The traditional classification does not conform to business usage. Buildings as well as land are rented on the same kind of contract—a contract which is to all intents and purposes the some kind of a transaction.

Can we make a list of the factors of production which will be more satisfactory than this—which will include all necessary outlays, all the resistances which must be overcome by a payment out of the value-proceeds of the product? A list that will be of greater significance in explaining the cause and the size of these payments (or imputed value, when utilized by the owner)? The writer believes that a careful examination of the nature of Real Cost of Production will yield such a list.

Real Cost of Production, in accordance with the definition given above, includes all economic goods used up or foregone and all pains and sacrifices incurred in order that the product be forthcoming. Real Costs of Production thus consist of a number of kinds of disutilities which can be classified as follows: (1) alternative uses of goods destroyed in the process of making the good under consideration, (2) personal exertion of body or mind, or other products which might have been forthcoming from an alternative exertion, (3) alternative products, which might have been forthcoming from a different use of instrument goods, or durable production goods, such as land, buildings and machinery, (4) postponed or deferred consumption, or an alternative time of consumption, (5) risks of loss or uncertainties, (6) efforts of society to provide conditions under which production will be carried on, and the attitude of society toward those who are carrying it on. Corresponding to these Real Costs of Production are, generally speaking, the following Costs of Production : (1) outlays for raw materials and non-durable production goods, such as fuel, (2) wages, salaries and earnings of management, (3) rents or instrument-hires, (4) time discount, or true interest (or "net interest" as Marshall calls it), (5) risk-interest, risk-profit, and insurance premiums, (6) taxes and contributions, and advertising and good-will outlays. But this, however much less simple than the common classification into rent, interest, wages and profits, is too simple for the actual facts. Thus rent, (or, in fact, any element in which there can be property rights and in which the future incomes can be discounted into the present, as is the case with wages under slavery) may be capitalized and the payment for the use of durable production goods, whether land or buildings or equipment, becomes an interest payment (or, if purchased outright, a case of imputed interest). The same may be true of the working capital utilized in the purchase of raw materials and non-durable goods. Again no mention made here is of profits. Anyone of these elements may appear in the form of business men's profits—its real nature perhaps recognized by the business man, and perhaps not. Then there are other elements in profits which cannot be reduced to any of these classes of costs.

The reader will doubtless protest that this analysis is an analysis from the entrepreneur point of view, but that for the theory of distribution the analysis should be made from the social point of view. To this the reply is made: first, that since our whole economic system is built up on the private property, entrepreneur point of view and all price offers, reservation prices and payments for the factors of production are made under such an economic organisation, the theory of distribution should begin from this point of view—for it is only by adopting this point of view that we can see what actually happens ; second, that while the money payments actually made for each factor are entrepreneur phenomena, the real costs of production, consisting of the six classes of resistances or alternative products listed above, are real social phenomena from the strict social point of view—they are the fundamental social facts behind the entrepreneur phenomena of Expenses of Production.

It will be well here to note the difference between the terms Cost of Production and Expenses of Production. Cost of Production is the money payment necessary to procure the use of a factor of production, or the income foregone in utilizing any factor of production for a specific purpose. Expenses of Production is a term used rather loosely by business men, but generally meaning cash outlays plus such non-cash costs as they may happen to include in their reckoning. Thus Expenses of Production often includes less than Cost of Production, and occasionally more. In the former are such cases as when a merchant says his expenses are low because he owns his own building and does his own accounting—that is, he leaves his remuneration for these out of his reckoning and includes it in his Profits. The latter case occurs when, through favouritism or some other reason, the entrepreneur pays more than is necessary to procure the utilization of the factor. Corporations sometimes pay their managers much larger salaries than necessary to retain their services or than the same men could get in other capacities. This is, of course, essentially a distribution of profits—at least it is a case of Unnecessary Expense, or an excess of expenses over costs. High wages may be in this category, but more often they are so reflected in greater efficiency that the cost of work done is lower than with a smaller wage. In this case there is in effect a higher price paid for a better quality unit of the labor factor.

But even if Real Costs of Production are fundamental social facts, there is a very real and vital difference between Individual Cost of Production and Social Cost of Production. Take land rents, for illustration. Suppose either wheat or maize can be grown on a certain piece of land. If wheat is grown the Social Real Cost is the maize that might have been grown. If maize is grown, the Social Real Cost is the displaced wheat. Now insofar as the rent payment is representative of the value (after deducting the necessary cost of utilizing co-operating factors of production) of the displaced crop, it is the money equivalent of a real cost and is therefore a part of the social cost of the crop produced. But competition among entrepreneurs may force the rent above that figure, as, for instance, if the wheat crop is much more valuable than the maize crop, and competition among cultivators to use the land for growing wheat is active. Each cultivator finds that he has to pay a rent larger than that necessary to prevent an alternative use of the land. As a resistance he has to overcome in order to produce wheat this excess is part of his Individual Cost of Production. But since the wheat would be produced regardless of the excess, it is not a part of the Social Cost of Production.

This brings up the much misunderstood idea of price-determining and price-determined costs. We shall see that, to some extent, all costs are both price-determining and price-determined, that is, all costs both influence and are influenced by the price of the product. But yet we may, in general, exclude this excess of Individual Cost of Production over Social Cost of Production from price-determining costs. If the price of wheat falls, but not enough to lead to the production of maize instead, there will be no effect on the supply of wheat, and thus no reaction toward a higher price of wheat. The amount that will be paid for rent depends upon the price of wheat. But let the price of wheat fall so that there is a greater advantage in growing maize—the supply of wheat will be affected. The amount of remuneration necessary to withdraw the land from the production of maize and to secure its use in the production of wheat is a part of the cost of production of wheat—a resistance which must be overcome if wheat is to be forthcoming. The part of the rent representing an alternative product is price-determining; the excess above this price-determined.

That this leads to the idea of costs as relative, that is, as relations between products, is evident. And this is the truth—costs, like value, are merely an expression of the exchange relations between economic goods. Price-cost is no more ultimate than price-value. To explain value by cost of production is merely to explain certain values by other values, which in their turn must be explained by still other values, and so on, with seeming endless circuitity. The Western rhyme is a good statement of the case.[1]

But yet, with all its circuitity, there is no approach to a list of the factors of production except through the concepts of Cost of Production and Real Cost of Production. Our grouping of the factors of production is, therefore, identical with our list of the chief resistances to production, except that it lists the goods furnishing services in production, instead of the alternative uses of those goods. It is as follows: (1) raw materials and non-durable producers' goods, or their unspecialized form as working capital, (2) personal effort, both physical and mental, or labor, (3) durable production goods, such as land, buildings, machinery and equipment, (4) waiting, or deferred consumption, (5) uncertainty-bearing, and (6) social aid, protection and goodwill.

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[1] Quoted by Davenport, Economics of Enterprises, p. 107.

"The price of pig
is something big;
Because its corn, you'll understand,
Is high-priced, too;
Because it grew
Upon the high-priced farming land.
If you'd know why
That land is high,
Consider this : its price is big
Because it pays
Thereon to raise
The costly corn, the "high-priced pig!"

Corresponding to these are the main distributive shares of the gross value-proceeds of industry: (1) purchase-price of raw materials and non-durable production goods, (2) wages, salaries, earnings of management and management-interest, (3) rents and instrument hires (depreciation included), (4) time-discount, or true interest, (5) risk-interest, risk-profit and insurance premiums, (6) taxes and contributions, and advertising and goodwill expenses. To this we must add (7) pure profits—or the residium above cost accruing to the entrepreneur. This classification, the writer feels, fulfils our condition that the best classification is that which best discloses the essential nature behind each sort of outlay. It does not, however, conform exactly to business usage, though it does so more closely than the traditional "wages, rent, interest and profits" when rent and interest are given meanings quite different than those current in business, and raw materials outlay, taxes, insurance premiums, advertising expenses, etc., omitted entirely.

[*To be continued*].

A DECCAN VILLAGE UNDER THE PESHWAS

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The village, in India, is and perhaps always has been the unit of national life. Towns there were, but in former times these have either been the residence of the court of a chief or a prince and his retainers, or only local marts for the exchange of country produce. Wherever we go, and nowhere more so than in the Deccan, we shall find the history of India in its villages, and though this may not be true to the same extent now as formerly, yet even in the present year of grace it is still certain that the heart of India is far away from the great centres of industrial activity, that in the minds of most of its people possession of land counts for more than the mere possession of wealth, that the politics of the village is far more to the vast majority than the politics of the district, the province or the state, and that if we want to understand the history of the country we must seek far more in the obscure unprinted records of village vicissitudes than in the more showy array of documents concerning conquests and Governments, princes and their retainers, or palaces and their inhabitants.

Few historians have, however, taken this view. How would the events usually chronicled have appeared to an intelligent inhabitant of a village ? Or, indeed, would they have affected him at all ? These questions are rarely asked, but the answers to them are vital to the understanding or to the real appreciation of the past of India. This is probably often recognised, but it is felt that it is impossible to know what the villagers thought of the events happening in the latter half of the eighteenth or the early years of the nineteenth century. And this is doubtlessly largely, though not wholly, true. At any rate in the

Deccan where my own enquiries have been made, it is by no means entirely correct to say that the simple annals of the village have left no record. We have, in fact, considerable quantities of material compiled at the time, in the villages themselves, giving in each case an account of the economic condition of the place from year to year. These records are fragmentary; many of them are lost; and many of the odd sheets still available are torn and defaced. But those that remain, fragmentary as they are, but written actually in the villages themselves at that time, furnish a basis for the economic history of the period of more value than all the records of court histories or the despatches of successful generals.

I propose in the present article to take the records of a single village, and with these as a basis, to try and catch a glimpse of the economic life of Deccan villages during the last one hundred and twenty years of Maratha rule, chiefly during the time when that rule was in the hands of the Peshwas. The village selected, located about twenty-three miles to the north east of Poona, is one of the many hundreds for which records exist. One of the crying needs of Maratha history in our time is the working of these records, giving, as they do, the most vivid and authentic view that now exists of the vast majority of the people of Western India.

The village whose records I wish to analyse is Jategaon Budruk in the Poona district. It lies on the banks of a small river or torrent which is often dry for several months in the year. It stands in the area of very uncertain rainfall, where drought and, apart from irrigation, famines are frequent. It lies also several miles from any main road, though that to which it is nearest is the great Mogul high road from Poona to Delhi and North India. There is, even to-day, no regular road to the village itself, the so-called road being largely a cart track across fields, Our first glimpse of the village whose general characters we have just indicated is in 1698. The army of Aurungzebe had just retired, and exactly one hundred and twenty years of Maratha rule were to follow. The record discloses a village apparently half derelict with only seventeen per cent of its land under cultivation, and only nine acres under irrigation. Much of the remaining area is not even owned, and all there seems to be cultivated is a small patch of the best land in the midst of a wide desolation.

Two facts immediately, however, emerge. There is no sign of any overlord, zemindar, or authority intervening between the owners of land in the village, with their headman or *patil*, and the government in Poona, and the land tax charged by the latter is paid *in money* direct. No sign of payment in kind or by the division of the crop exists at this period. This is important, and shows a relatively advanced type of economic relationship between the government and the villages. The second fact that appears is that only the land actually cultivated is charged with land assessment, and this seems to have been the case right through the period of Maratha rule. Nearly half the cultivated area is held either without any payment or with reduced payment to the Government for services rendered in the village (*inam*), by the *patil* or headman and by the *mahars* or village servants respectively. This latter class, although belonging to the untouchable classes, formed, then as now, one of the most important sections of the village community.

Apparently at this early time there was only one class of land ownership, probably that which was termed the *mirasi* tenure, which included full occupancy right of the land, and which later on became the basis of the general system of landholding in the British period. Some few cultivating landholders had garden or irrigated land, but the majority had then, as they have still, to carry on the annual gamble in rain of which agriculture in the eastern Bombay Deccan usually consists.

Twenty-six years later, in 1724, when the regime of the Peshwas had become fairly well established, and apparently a greater condition of order prevailed in the Deccan, the position of the holders of land in this village became more secure, and the derelict area began to be taken up. Most of this was brought into cultivation under a *kaula,* or written assurance from the paramount power of the security of the cultivator's possession, for a long period, provided the land was cultivated and the assessment paid. It is curious to read in the records of this year the names of the Maratha families which still form the landowners and cultivators of the village,—a striking example of the permanence of the life of a Deccan hamlet.

Accompanying the obviously increasing security of life and property, there is a very marked increase in the demands made on the village by the central Government, in the form of a raising of the land tax on the cultivated area. The total Government revenue had, in fact, already increased, partly by the increase of cultivation and partly by the raising of the assessment, from Rs. 300 to Rs. 526 and by 1727 it had gone further up to Rs. 666. In this last year we get the first indication that an assessment for revenue was not always paid, for no less than seven per cent of the total amount was not recovered. For the first time also, part of the revenue so obtained was diverted to others than the Government itself, Rs. 50 being sent to the *subha* or district officer, and Rs. 100 to the *mokashi.* The latter was probably a grant of old standing for military purposes.

As time goes by, the Government revenue at this period tends to increase. Whether we have struck a time of more than average certainty of crop, or whether the rule of the Poona Peshwas was a great improvement on what had gone before, in 1730 the revenue collected amounted to Rs. 1173, or more than four times the amount collected in 1697. It was not, so far as we can make out, due so much to an increased rate of assessment, though this was partly the cause, but to an extension of cultivation. During the whole period of the Peshwas' rule, the land tax of the village, as we have already said, was only charged on the land actually under cultivation in any particular year. This was a most important provision, and we are not sure how far it was universal. It applied, certainly, however, in the present case, and it may be worth while at once to give figures for a number of selected areas, which prove it.

1698—Area cultivated.

(*a*)	Dry or *jirayat* land ..	318 acres at 15¾ annas per acre.
(*b*)	Garden land, ..	9 acres at Rs. 4-5-2 per acre.

1796—Area cultivated.

(*a*)	*Sosti* or fully assessed land ..	865 acres giving Rs.	848	12
(*b*)	*Upri* or land annually rented. ..	288 acres giving Rs.	183	0
(*c*)	*Kauli* land. ..	297 acres giving Rs.	69	6
(*d*)	Garden land. ..	9 acres giving Rs.	56	0
		Rs.	1,157	2

396 acres were noted as uncultivated and hence not taxed.

1804—Area cultivated.

(*a*)	*Sosti* land ..	720 acres giving	Rs. 800
(*b*)	*Upri* land ..	804 acres giving	" 139
(*c*)	Garden land ..	9 acres giving	" 56
			Rs. 995

540 acres were noted as uncultivated and hence not taxed.

If the principle of charging land assessment on the area actually under cultivation only was general under the Peshwas, it would certainly have two effects. It would make the revenue exceedingly variable, which it really is, and it would also tend to reduce cultivation when either physical or political conditions were unfavourable to the success of the crops. It would, on the other hand, make possible a rate of assessment on the land actually cultivated considerably higher, relatively to the value of the crop produced, than can be imposed in the recent British assessments.

The extraordinary variations in the gross, as well as in the net revenue so produced must have been a great cause of anxiety to the Peshwas' accountants, or to those to whom the revenue of a village were assigned. The present village furnishes some figures which well illustrate the point. In 1768 the *tankha* or standard revenue expected from the whole village was declared to be Rs. 1061 per annum. At the same time, the *kamal* or the highest income obtainable from the village when it was cultivated to its full capacity was estimated at Rs. 2100 per annum.

The gross revenue actually collected at different dates was as follows:—

1697—Rs. 275; 1698—Rs. 301; 1724—Rs. 526; 1727—Rs. 620; 1730—Rs. 1173; 1767—Rs 650; 1770—Rs. 1937; 1785—Rs. 553; 1790—Rs. 493; 1796—Rs. 1311; 1803—Rs. 595; 1808—Rs. 766; 1817—639.

The variations are extreme. Even if we omit the first two years quoted, a variation from Rs. 493 to Rs. 1937 is very great indeed. It is not due, as might possibly be supposed, in more than a minor measure to an arbitrary alteration of the assessment, but to the principle of only charging on land which the cultivators found it worth while to put under crop, a principle which appears to be acknowledged throughout. From a cultivator's point of view this was a most valuable provision, though it is obvious that it must have been the despair of the Peshwas' financiers.

The variations of the assessment per unit area cultivated, though considerable, were, as already noted, not so great as would at first sight be supposed. Calculated to our present units of area, the actual rate appears to have been as follows, for dry, *i.e.* unirrigated land on the average: 1698—Rs. 0-15-0; 1770—Rs. 1-5-9; 1796—0-15-9; 1803—Rs. 1-1-9; 1808—Rs. 0-13-0; 1817—Rs. 0-10-7. It may be of interest to compare these rates with those of the regular settlements under British rule, though it must be remembered in these latter cases that all the land in private ownership in the village is now expected to pay every year, apart from the suspensions and remissions in years of famine granted in recent years. The rates under British rule are as follows, but they include those for garden land which very slightly raises the figure and makes it not quite comparable with those given above: 1844-45 settlement, Rs. 0-9-9 per acre; 1874 to 1916-17, Rs. 0-10-0 per acre; 1916-17 to date, Rs. 0-12-0 per acre. The expected revenue from the village under the last of these settlements is Rs. 1581, or about fifty per cent more, in actual money, than the *tankha* or standard revenue under the Peshwas.

The old figures should, if we want to compare them with the rates now prevailing, be expressed in terms of the amount of produce, that is to say, the grain to which they would be equivalent, and if this is done the real character of the assessment is exposed. The rates, calculated as a proportion of the crop grown on the land, appear generally under the Peshwas to be high. In proving this statement we are faced by the difficulty of obtaining records of prices for the years of which village records exist, and also by the difficulty of determining the actual character of the land under cultivation in the years for which we have other data. We have been supplied with price records in Poona for a number of years by Rao Bahadur Parasnis of Satara, and for other years by Rao Bahadur Joglekar of Poona, and these form a basis for the consideration of the question. As regards the character of the land cultivated it has been presumed in each that the best land in the village was cultivated, and that if a reduction in the area cultivated occurred, it was the poor soils that were omitted. How far this is justifiable may perhaps be questioned, but it seems a reasonable supposition.

We will take two dates, 1770 and 1803, for which we have definitely the Poona prices for *bajri*, the chief grain produced in the village, and compare the rate of land assessment per acre, in seers of *bajri* with that in force in British times between 1888 and 1917 and since 1917. To these I have added 1808 where the assessment can be compared on the basis of the prices of 1806. The price of *bajri* in 1770 was 16 seers per rupee and in 1803 was 6 seers to the rupee, while in 1806 it was 10 seers to the rupee. The second year quoted was obviously a year of famine. The average price of *bajri* between 1888 and 1917 was slightly over 13 seers per rupee, and since 1917 about 10¾ seers per rupee. The results of the comparison are as follows:—

	Assessment per acre in rupees.	Assessment per acre in *bajri.*	Assessment of similar land 1888-1917 in *bajri.*	Assessment of similar land 1917 to date in *bajri.*
1770	Rs. 1 5 9	21¾ seers ..	11¼ seers ..	10½ seers.
1803	Rs. 1 1 9	6¾ seers ..	12 seers ..	11¼ seers.
1808*	Rs. 0 13 4	12¾ seers ..	12¼ seers ..	11½ seers.

It is unfortunate that we do not have village records and prices for the same years in more cases, but in all the years for which we have figures between 1770 and 1791 the prices were as low or lower than at the former date, and so the figures for that year do not represent the grain assessment as heavier than it really was, but rather the reverse. 1803 was, as already remarked, definitely a famine year, and in 1806, the country was apparently recovering from several years of scarcity.

The fairest comparison is, therefore, with 1770, and from this date to 1791 the rate calculated in grain was definitely heavy as compared with that in recent times. It could, in fact, be paid, because it was only charged on land actually cultivated.

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* Calculating on prices of 1806.

The saving of the situation in Maratha times was evidently the fact that the land tax was only levied on cultivated land. With this allowed, the very much higher charge might be (though we are not sure how far they were) far less burdensome to the owner of land than the lower rates of assessment of modern days in the very uncertain climate of the eastern Deccan. It is likely that the system discouraged cultivation. It would be anathema to the disciples of Henry George. The revenue was provokingly varying. But the villages prospered so far as we can judge, and in the first year for which records exist after the advent of British rule, it gave a land revenue of Rs. 1900 as against Rs. 300 at the commencement of really effective Maratha rule.

The land revenue was by far the most important village tax under the Peshwas, as it is now, but it was by no means the only one, and the records in hand indicate how close was the knowledge of the central authorities in small matters. There was a regular tax, for instance, on the non-agricultural population of the village (*adansara*). In 1770, for example, the village carpenter was charged Rs. 9, the priest Rs. 5, the *dhobi* or washerman Rs. 3, the potter Rs. 5, the barber Rs. 7, the fisherman Rs. 4, and the shoemakers taken together Rs. 10. The relative importance of these village functionaries is to a certain extent indicated by these figures. But these regular village inhabitants were not the only ones taxed by the central Government. A wandering tribe of gipses (*berad*) squatted on the village land; immediately they pay a tax, albeit a small one, to Poona. The fact that the figures appear in the account of a remote village controverts the idea of any slackness in the supervision of revenue in the palmy days of the Peshwas' rule.

The revenue, in the earliest days of our records, appears to have been paid directly into the Government treasury, with few if any deductions. In 1727, as we have already noted, we first hear of a payment to the *mokashi* and also to the *subha* or head of the district, before the amount reaches the recipients. But as time goes on, a number of officials are able to obtain a share before it reaches its destination. Thus in 1770, a very prosperous year, no less than four people had their fees as follows: the *mokashi*—Rs. 125; the *deshmukh*—Rs. 25; the *deshpande*—Rs. 40; and the *sar patil*—Rs. 24. The latter three were simply supervising revenue officers. These amounts were, however, extremely variable. In some years they were not paid at all, as in 1796. Such revenue officials were constantly increasing in number under the Peshwas' rule, but their pay was dependent on the revenue being secured; if this was not the case, they apparently went without.

In one essential particular the village system of accounts differed completely from that now in vogue. *Then* the whole of the village expenses, even including such minor items as those for lights and stationery, were incurred by the village officers, and the cost deducted from the money sent to the treasury; *now* all the money received is sent, and the budget for village expenses is quite independently supplied from the district or subdivisional headquarters. Under the old system it was easy to find the proportion of the income to the expenditure, now it is practically impossible except after a long search in an entirely different place. The system formerly in vogue makes the old accounts more interesting. We can see recorded in these figures, the arrival of the Peshwa on tour, or of some other high and mighty official. We can see the provision for his food, the arrangements for his tents, the fees paid to his *havildar*, his flag bearer, his elephant drivers, his court priest (*bhat*) and many of his attendants. We can see the forcing of labor to prepare for the great man's arrival, and the recovery afterwards of the amount from the court at Poona.

In these accounts we see contributions to temples, to festivals, even the *mohurrum*, to the cost of a goat killed in the village gate on Dasara day, to charity without explanation, to groups of wandering mendicants. All are considered legitimate charges against the Government revenues, and all appear frequently in these truth-telling accounts. Several times in the later and more degenerate days of the Peshwas' rule, the signs of the passage of raiding and often rebellious forces appear, when apparently they have to be bought off. The Peshwa's army itself imposes contributions. But the contribution or the bribe to leave the village is always charged against the Peshwa's revenue for the year.

Thus, in 1796 we read an item "*Khandani* taken by Daulatrao Shinde's army, Rs. 904-8-0;" in 1803 an item "to......Deshpande, who had paid the horsemen of Vinchorkar Rs. 100;" in 1817 an item "Expenses of the Peshwa's army which had come with Baba Saheb from Talegaon—Rs. 200" and so on.

This last series of items takes us a long way from the present peaceful Deccan, and reminds us of the necessity of another item in 1785:—"For the repair of a wall round the village—Rs. 13." For a wall was evidently needed, and the prejudice which still continues in the Deccan, in contrast to the habits in many other parts of India, in favour of living in a walled village rather than out in the fields which are being cultivated, would seem to date from disturbed times such as these.

But there seems no sign in our records of the village being devastated. Much, if not all, of the money given to raiders is recovered from the Government by being deducted from the revenue payable. A force appears. The villagers retire within the wall. The village officers wait trembling before the leaders and offer presents. They are not enough. Large demands are made, and ultimately paid. But the amount really falls on the Peshwa's revenue and it is doubtful how far, in a village essentially consisting of unirrigated land and of *kharif* crops, the passage of a raiding force materially affected the prosperity of the cultivators of the place. There would be little love or hatred of the Government or of its opponents, and what the village lost was passed on as a charge, and an acknowledged charge, on the Government in power.

Another feature to which we should like to draw attention is the high status and value of the position of village *patil* in the time of the Peshwas. More than this, it was not only a duty hereditary in certain families to which the holding of certain village lands was attached, but was also a saleable property of very valuable character. The *patilki* of the present village was held by two families, and these agreed to sell half their right and the property attached to it to an outside family of Marathas for no less a sum than Rs. 3000. This, which at present would be worth considerably more than this amount, seems a great deal for the position with half the land attached to the office, in a very obscure village. It involved possession of only thirty six acres of land, and as a financial investment in a country, and at a time of high interest for money, it would be hard to conceive of anything more unsound. But the honour attached to land holding, and particularly to being the *patil* of a village together with, it is possible, the opportunity for other and less legitimate forms of gain, was such that the amount was paid. We fear that the market value, or in other words, the status of a village *patil*, has fallen much in British times. Some will welcome the fall, others look upon it as almost a disaster, as it indicates the reduction in importance of the village community,—the most stable thing in British India, There is another feature of the transaction just mentioned which is worth recording. The sale of the village headship had to be registered in the Peshwa's office in Poona. Such registration was paid for by fees. These went first to the Government itself, and secondly to the officials and clerks through whose hands it passed. Out of Rs. 3000 received by the selling party no less than one third (Rs. 1035) went in fees. Of this amount Rs. 800 were to the Government, Rs. 135 to the department of the *phadnis* (or accountant), and Rs. 100 to the department of the *chitnis* (or secretary). The system is well illustrated by these figures, and it is curious to find that Nana Phadnavis, the great revenue officer and administrator of the Peshwas, appears in the records as personally receiving, by virtue of his office, a fee of Rs. 100 for a transaction like that under discussion.

The history of this village well illustrates the truly Indian method of rewarding services by grants of land or of rights in land, and also the system of assigning the revenue of special places to certain sections of the administration, for their support. One man, whose name indicates him to have been a priest, had been at some time previous to 1745 given thirty six acres of land at the village of Shirole, about thirty miles away from Jategaon. When he appeared to take possession of it, it had been appropriated by someone else. He complained, and in 1745 the requisite amount of land, without any payment of revenue, was granted in the village under consideration, to continue to his descendants for ever. Apparently he had great difficulty in getting hold of the new grant, for in 1752 another order appears from headquarters reciting the fact that another man had retained possession of land. The latter was directed, doubtless much to his chagrin, not only to hand over the land but also to pay four or five years' back rent to the grantee, whose descendents enjoy possession of the land to this day. I should have liked to be present when the court priest armed with his new order appeared to claim his property.

A reminiscence of a similar grant, but this time of the whole village, is contained in the records of 1768. The village had by some means, of which the records have disappeared, come into the possession of a Mohammadan of Chakan, another village some distance off. Probably it was a grant of the revenue of the ordinary type. But the grantee proved a rebel, and the property was confiscated. Instead of the recovered revenue being devoted to the general purposes of the government the question immediately arose after the confiscation as to what department should receive the village revenues. In this case they were assigned to the support of a force of cavalry belonging to the Peshwa's government, and from that date to the latter part of the reign of Bajirao II they were paid to this body. It must have been a sorry sort of dependence for a military force,—being so utterly uncertain. Hence before long a very serious complaint was made. The village lands were not properly cultivated, the crops were not properly reaped, hence the revenue was far below expectations. The result is curious. An enquiry was made, and the revenue which might be expected for each of the following five years was laid down. A rapid rise was anticipated as a result of pressure on the people to cultivate as much as possible, and it was suggested (we fear the officer had his tongue in his cheek) that a revenue of Rs. 950 should be permanently increased to Rs. 1700. The report and estimates were the purest eyewash. The man who wrote the report and made the estimates must have known that the revenue would never be obtained except under very special circumstances. And in 1785 the same complaint as before was made. The revenue has sunk to Rs. 552. Again it is screwed up to over Rs. 1000, but five years later it is again down below Rs. 500.

We suppose that it was this almost intolerable uncertainty which finally caused the introduction of the revenue farming system under Bajirao II. This system at any rate secured the government against the extreme variations of revenue, but at the risk either of rousing the people into general opposition to the ruling power or else of making them into abject slaves. In this case the adoption of the farming system came before 1808 though we do not know the exact year from the village records. At any rate after 1808 there is no longer any mention of the Government cavalry, and in addition, one of the common incidents of revenue farming in the Deccan appears. A note is made, in fact, that over four hundred acres remained uncultivated on account of riots by one of the village *patils* and his people, who drove out the owners of his land. In 1812 the revenue collection (*kamavisa*) was definitely farmed out to the Peshwa's notorious favourite, Trimbakji Dhengle, one of the worst influences at the court of the Peshwa in its last days. In this case, all that the revenue farmer could do did not bring the expected revenue. The actual money obtained from the cultivators went down in 1817 to Rs. 792, and of this collection only Rs. 227 reached the collector, the rest being taken away by armies of the Peshwa himself, by raiding parties of *gosavis*, and by the largely increased village expenses.

It might be thought that in these troubles, during which the sun of the old Poona government was finally setting, the village was largely and permanently impoverished. This has been, at any rate, the view of most of those who have written on the subject. I doubt whether it was really so, however, to the extent suspected. What happened is that the cultivators simply ceased to cultivate more than a small proportion of their usual acreage and ceased to pay revenue for so large an area. Immediately on the return of peace and security, the revenue went up again and in 1823 it is at a higher point than it had reached in any but the very best years of the Peshwas' rule.

Such are the outlines of the story told in these records. There are many other facts revealed which I am not able at present to discuss. The existence of famine appears at times very clearly, and on those occasions there is both remission and suspension of revenue even on cultivated land just as in the most modern system. There are losses of crop from locusts, as in quite recent years, and from other causes. And so on. But the most marked impressions which these records have left upon me are two. The first is the way in which, by limiting the assessment of revenue to land actually cultivated, the Peshwas' government in its palmy days made a very high assessment possible without hardship. But it did this at the cost of the certainty of its own revenue. In evil days, the income of the central authority must have gone down so badly that all its departments must have been badly starved, and this fact probably led finally to the introduction of the farming system by the short-sighted ministers of Bajirao II.

The second and far the most important impression given by these records is that of the stability of the *ryotwari* village system. I have already referred to this matter, but it seems vital to the understanding of the history of the Deccan. Did it, in fact, matter much to the vast majority of the people whether the rule was that of the old Mohammedan kingdoms, of Aurungzebe, of the Maratha kings, or of the Peshwas, or even, in the early days, of the British? The village was a self sufficient unit; its *patil* a more important man in reality than any officer of the government. A time of disorder meant the reduction of cultivation, the temporary wandering of some of the inhabitants to more settled regions, and the consequent reduction in the government revenue from the village. Drought, leading to famine, meant the same thing. Hardship there was, but hardship is the common lot of man in the eastern Deccan. The assessment charged on the village varied a little, and was generally high, and the variations seem to have been quite arbitrary. But any attempt at a large increase, as in 1768, failed; any attempt to get more by farming the revenue also failed. The latter led to riots, as well as to loss of revenue; the former led to reduction of cultivation, and hence again to loss of revenue. Given peace and order, with good seasons, the income of the government went up to a fairly definite maximum; if there was disorder or bad seasons, cultivation, revenue and, we think, population also automatically adjusted themselves. Truly the village was an "*imperium in imperio*" against which the forces of all central governments spent themselves without disturbing its solidity. Here is the one essential institution of the region,—the village.

Since the time of the Peshwas things have changed, and the village, though still probably the most solidly founded institution in the Deccan, does not occupy the position it did before, and perhaps it is still losing ground as a factor in national life. But that is another story.*

*I am indebted to my friend and calleague, Mr. N. V. Kauitkar, for copying and translating into English and into modern measures, the records summarised in this paper—H. H. M.

THE BASES OF INDIAN ECONOMY.

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When I began my career as a teacher of economics, the most important problem before me was how to teach Indian Economy. Had there been one common method of teaching the subject prevailing in the colleges in these Provinces, the problem would perhaps have never attracted my attention; but as it is, the variety of ways in which it is being taught in the colleges and universities, and the great divergence of opinion existing among these as to the best method of teaching, spurred on my imagination to select for myself a method of teaching, at once simple and intelligible.

As a student I had studied under two methods of teaching. In a mofassil college, where I read for my B. A., Indian Economics used to be taught as an independent subject, in the second year of the course, when the class had finished the principles of economics. This I believe to be fairly representative of the practice in other affiliated colleges in the Provinces also. The idea is further supported by the clear line of demarcation drawn in the University papers, although in the question papers of recent years this tendency seems to be fading away. The method adopted in teaching it used to be to dictate notes, beginning with the broad physical features of India in their barest outline, and without expressing any relation of cause and effect or the complementary nature of the various regions. Then would follow a mere enumeration of the various agricultural and mineral resources, the kinds of cattle found in India, the names of the systems of canals and railways, the number of factories of various kinds, the output of coal and iron in India, and the desirability of protective tariffs, So ended Indian economy in a mere enumeration, a dull uninteresting reading, though certainly very amenable to the method of learning by rote. While in the University Department of Economics at Allahabad, I learnt the basic facts about Indian Economy from a map, and realized the significance of the geographic treatment of the subject. The necessity for the study of Indian geography in the study of Indian Economy seems to have been understood by the various teachers in the Provinces, as references to Indian geographic phenomena are met with in the notes given by most of them. But still they do not seem fully to have realized the intimate connection between the geography of India and Indian Economy, and still less the importance of treating the subject in a geographic way. The failure to recognise this important fact seems to have been due to the general misconception of the terms "Indian Economy" and "geography"; and, I may add, to the undeveloped character of the science of geography itself.

Students of economics in India have been laboring until very recent times under the unrealised and unrealisable hope that at some time or other we shall have developed some general principles or laws peculiar to this country. This explains why they use the term "Indian Economics." They had thought that the books written by western economists were not applicable to India at all, and that if we wanted to make some real progress in economic thought about India, we must discover and develop those peculiar unities which underlie the economic activity of the people of this land. This was the view of that school of economists to which such prominent men as Ranade, Gokhale and many others belonged. But the present day student of economics in India has begun to realise that the fundamental laws of the science of economics, such as the law of satiation of wants, the law of variety and the law of proportions, are quite as applicable to India as to the western countries although their application needs a little modification here and there. In consonance with this changed outlook towards the science of economics, a change has come to pass in the meaning of the term "Indian Economics." If to the old school of economists, Indian Economics stood for a collection of the laws of consumption, production, distribution and exchange peculiar to this country, then to the present day student of the subject the term signifies a mass of information, statistical and descriptive, pertaining to Indian economic conditions and problems, and proposed solutions thereof. Thus V. G. Kale, one of the leading living Indian economists, observes: "Indian Economics is not a separate science, because it does not seek to discover new laws. We have indeed to observe things as they are, and describe the economic activities of the various classes of the population, and the different economic phenomena like high prices, low wages, and increasing rents; and to point out the relation of cause and effect. But we have also to point out how improvements may be effected by individual or collective action and evils may be prevented and remedied. It partakes more of the nature of the art of economics or of a normative science,"[1] Or again: "Indian Economics may also include those questions of economic policy which will tend to better the economic condition of India. Thus if we admit the general distinction between science and art as valid, we shall have to put Indian Economics as an art."[2] In consonance with this changed outlook, I take the liberty of recommending the use of the term "Indian Economy," instead of "Indian Economics". The term, if it finds acceptance in recognised circles of Indian economic thought, will remove a great deal of confusion of thought about the true nature of the subject. To me it appeals as both more expressive of what it stands for, and more scientific.

[1] Kale: *Introduction to the study of Indian Economics,* 1907 edition, page 8, para. 2.

[2] S. V. Ketkar—*Essay on Indian Economics,*

If we concede, as I believe we should, that this is the correct way of looking at Indian Economy; and if we at the same time recall to ourselves the modern ideas about geography, then we should be able to realise the importance of Indian geography in the teaching of Indian Economy.

According to modern belief, " Geography is primarily the study of the various natural divisions or provinces of the earth's surface, as illustrations of the relations between the inorganic physical facts of the earth, air, and water, on the one hand; and organic facts of the vegetable, animal, and human world on the other."[1] To illustrate: the investigation of the structure, origin, form and climate of a lofty plateau, and a neighbouring arid plain is not geography but geology, physiography or meteorology. Neither can the study of the methods of plant growth and animal nutrition rightly be called geography, but botany or zoology. When, however, we consider the fact that because of the elevation of the plateau, its climate is such that the grass grows abundantly in summer; while the plain being lower has less rainfall, and bears only a sparse growth of grass in the early spring, we at once bring in the relation between the organic and the inorganic; and the study becomes geography. For the purpose of geography it is only necessary to understand enough of the plateau, the plain, and the grass to gain a clear conception of how the one acts on the other. If animals inhabit the country, they must be such as can live on grass, or can prey on their grass-eating companions. Further, if the plain is waterless in summer, and the plateau is deeply buried in snow in winter, the animals must perforce migrate, and a new geographic factor is introduced. When man enters the region, he finds it too dry in one part and too cold in another for agriculture. Hence he must live upon animals; either as a hunter or, when the population becomes a little denser and settled and the wild animals diminish in number, as a shepherd. In either case he must wander from place to place. Such a nomadic life induces certain moral qualities, such as gluttony, alternating with abstemiousness, hardihood under physical difficulties, laziness, hospitality, and others. Thus the physical features of the region give rise to certain kinds of vegetation, which in turn determine the species and movements of animals, and cause man to adopt the nomadic life. And as a result man develops certain habits, physical, mental and moral. Or again, we might go to the well-watered Indo-Gangetic plain, with its rich soils, where it is easy to practise intensive agriculture, and to live a sheltered, easy life. All this, on one hand, tends to induce weakness of will, cowardice, immorality, and the weakening of those ties between parent and childern which are required for the careful training of the growing generation; and on the other hand to induce high religious speculation, fatalism, luxurious living, the practice of arts, and that wonderful village organisation, which is the peculiarity of the plain life in this land. Doubtless religion and other causes play an important part, but as we shall see later on, religion itself is very much influenced by the physical conditions of a region, and there still remains much in the character of the people of Hindustan which owes its origin more or less directly to physical conditions. Not that a single individual's character is directly influenced to a very great extent by the inorganic world around him. He inherits, or receives through the training of others, most of what he is. "Nevertheless inheritance or race qualities are merely the summation of past training"[1]—the influence of physical and moral forces. The training of the average man is strictly in accordance with the social order into which he is born, and the social order owes much of its character to the rivers, the plains, the forest, the mountains, or the factory by which the occupation of the majority of the people is determined. When all this is considered, it becomes almost impossible to assign limits to the influence of physical environment upon the character of the people living in a particular region.

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[1] Ellsworth Huntington in *The Pulse of Asia.*

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[1] Ellsworth Huntington in *The Pulse of Asia.*

We may now say that modern geography is more than a catalogue of facts; it is also a study of the relationship of these facts. The old idea of geography was that of the teaching of "what" and "where"; modern geography also answers "why." "Modern geography lays great stress upon the human side of geography, and seeks to explain the relation of human life to the earth, *i. e.*, it asks what is the significance of the various geographic data, such as rivers and mountains, to man; or we may say that it attempts to answer how the various geographic features of a country have influenced the activity of the people living therein. Modern geography then is the study of the earth and man as related to each other, and not a description of the features of the earth alone. It studies the features of the earth, so that the people may be understood, and the future possibilities of the utilisation of the environment to the increased well-being of man may be discovered. A national costume, a national occupation, racial structure and even a racial spiritual trait, may be traced directly or indirectly to the influence of climate."[1]

From the above discussion of the nature of the two subjects, it should have become clear that two branches of Indian Economy lend themselves pre-eminently to geographic treatment. One of these branches seeks to describe various Indian economic phenomena, such as the distribution of crops, the distribution of population, the existing development of the industries, the varied habits, and the efficiency of the people. The other seeks to propose solutions for certain economic problems in India, such as the shortage of food relatively to population, and the influence on it of the adoption of scientific distribution, the development of the means of communication, industries, and hydro-electric works in certain parts of the country. All of these can be taught, one cannot say with what practical results, but certainly for the passing of examinations, by the method of notes and learning by rote, as they are being taught these days in most of the colleges. But it is an unreal, lifeless and impractical method by which it is difficult for the students to remember things for any length of time, and by which it is thoroughly impossible for him to make any practical use of his learning in after life. All these things should be taught with reference to a map, pointing out the reflex influence of environments on the delineation of present facts, and the explanation of the proposed changes. To illustrate: suppose we want to teach the distribution of crops, then it is not enough to give an inventory of crops raised in different parts of India, and in different seasons, but the reasons why they are grown in a particular region and a particular season should also be explained. This can best be done my means of a map, where one can touch upon the nature of the soil, the character of the rainfall, and the influence of the means of communication, all at a time; and point out that such and such a crop is the result of such and such natural environments, and that given those environments one should expect that crop to be predominant there. Then again, while dealing with the distribution of population, we should point out the determining influence of the soil, the climate, the rainfall, the means of communication, and industrial phenomena that are important in this connection; and this is best done by means of a map where all these things are present in a common perspective. The student can see all these at a glance, and realise their influence on the central point simultaneously. By adopting this method, the student learns not only what he is expected to learn from notes, but something more; and in a shorter time and with a greater surety of longer retention than in the previous method. He learns to argue out for himself the relation of cause and effect, and is helped a great deal in cultivating a broad and logical outlook, a thing very much to be desired in our students.

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[1] Holtz, *Teaching of Geography*.

But there is a still greater importance in the geographic treatment of Indian Economy in its second sphere, where it seeks to find out possibilities of economic development in India, and where it proposes to put forward definite proposals for attaining definite ends. It is almost impossible to deny that industrial development primarily, though not exclusively, depends on matters described in geography—the natural products of a country, the character and efficiency of the people, and the means of communication which afford facilities for trade and determine the extent of the markets. The beginnings of economic activity have always been determined by surroundings; and it is only in advanced stages of economic development that man succeeds to a limited extent in modifying his environment to suit his needs. Man's power over nature being limited, it is desirable, from an economic point of view, to adapt his activities to his surroundings, to utilize the natural forces to their best advantage ; and hence the importance of a close study of the natural environments before we start on any industrial venture.

From what I have said above, it should have been made clear that the geographic treatment of Indian Economy is very much to be desired. Not only is the student likely to learn things easily and quickly, but this method also helps him very much in acquiring a habit of gleaning information for himself from his environment—a quality which every nation should attempt to develop in its members, if it aspires to rise in the scale of civilization and the comity of nations. "The cultivation of the map-habit of thought is no less pregnant in the sphere of economics than it is in the sphere of strategy."[1]

Having discussed the importance of geography in the study of Indian Economy, we may pass on to discuss the significance of socio-religious ideals in the study and the teaching of the subject. Economic activity is the result of human wants, the character and quality of which are very much influenced (1) by his physiological needs, and (2) by his environments ; and which are satisfied by commodities secured either directly from nature in a form suitable to meet the need of man, or by commodities made by the application of human force, independently of or in conjunction with the forces of nature, upon the objects secured from her. But with all this the higher wants of man are not the result of these elementary causes, but are greatly influenced by his ideals of life; and the importance of the influence of those ideals increases with every advance in civilization. There are certain writers, most prominent of them being Buckle, who have unduly emphasised the influence of environment on civilization; but we have to remember with Dr. Gilbert Slater and Prof. Patrick Geddes, that "What exists in the district in which people live—seas, mountains, plains, forests and the like—determine what occupations are possible, and the occupations demand certain qualities in the people following them, and by natural selection enforce the attainment of such qualities upon the people. That is true, but it is only half the truth; and the other half of the truth which is the one that it is even more important for us to bear in mind, is expressed by the formula—Folk-Work-Place. For the people can determine what they will be, by choosing what they will do, and having chosen their work, they can fashion the place ; they can mould the environment in harmony with the ideals."[2] "Our actions are governed by our mind and so also the actions of a country are governed by the sentiments and ideas that prevail therein."[1] Therefore, if it is essential to get a thorough grasp of the natural environment of a country in order to understand its economic activity ; then it is equally essential, if not more essential, to study the religious and social ideals and institutions which inspire new wants, modify the rigour of pure economic dictates, and soften the hardness of purely elemental instincts. The extent to which economic issues are themselves determined, at any rate since mankind became reflective and self-conscious, by prevailing ideas, ideals, and aspirations, has perhaps, been underestimated. There has been a time no doubt, and such time may come again, when people wait the actual impulse of hunger to seek new resources by migration or conquest; but in our civilization the movement of causation may almost be said to have been reversed; we find that it is new activities which generally breed new wants. We can not, therefore, form a correct estimate of the economic conditions of a nation without giving due consideration to the part played by its socio-ethical ideals and aspirations. No doubt nature effects man, but the effect of man's activity on nature must also be recognized. If in the study of the positive aspect of national economy, an insight into these ideals is very necessary, then in its normative aspect, where we suggest new lines of reform, their consideration is indispensable.

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[1] Mackinder, *Democratic Ideals and Reality.*

[2] Slater and Geddes: *Ideas at War.*

The influence that religious ideals and philosophic doctrines have exercised upon the economic activity of the Indian people can be best realized by those who know something about the arts of India. In England, where philosophy is commonly held to have no practical bearing on life and policy, people used to think, and with the exception of very few, still think, that India had no arts;

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[1] S. V. Ketkar: *Essay on Indian Economics.*

and that whatever they saw in our statues of gods and goddesses only confirmed them in their belief. They never realized that the key to the understanding of Indian art was to be found in Indian religions and in Indian idealism. To the fortunate few, like E. B. Havell, who have succeeded in entering into the spirit of the arts of the country, the four-headed, and tetra-handed figures become at once full of meaning and inspiration; while to those who lack this simple knowledge, they continue to be but the grotesque efforts of a pagan race. But the influence of Indian religion and philosophy is far deeper and far wider than is seen in these statues and in the *stupas.* One can trace it in the very shape of our home utensils, our clothes, and our furniture. Many an industry in India flourishes because it provides commodities that meet the spiritual needs of the people, to wit, the industry that makes idols for the worship of the common people. The metal industry and many others make one and a thousand commodities that would never have been produced in any country other than India; and even in India if she were, say, a Christian country.

Coming to sentiment, we have a very good example in the recent revival of the *charkhas* and of the hand-loom. Not long ago people used to think that the weaver had no choice between the servitude of the power loom mill and the servitude of the village *sowcar*; and if any one ever talked upon the revival of the hand-loom, people looked upon him as a foolish crank, and the votaries of the power loom and the modern factory used to remark that it was no use wasting sentiment on the village weaver. It is common for modern scientists to profess a fine contempt for sentiment. Sentiment, they argue, did not help the hand-loom weaver of Europe; nor will it in the long run save the hand-loom weavers of India. But what has mere sentiment done in India, and that too in a space of two or three years and what it is doing? To me it seems that sentiment has helped to save for India an industry worth commercially more than the whole of Anglo-Indian industries; and it will be this sentiment, if kept up, that would again bring to the weaving industry of India that artistic beauty which was its pre-eminent feature before western methods of manufacture were adopted. The destruction of Indian art which has been going on in India since the coming of the British is a loss to civilization and to humanity, which should and can be arrested, if Indian industrial reformers will bring to their work the true artistic spirit which England had to learn, through Ruskin and Morris, after the destruction of all her traditional art and after much waste of time and opportunities. Much of Indian art is still living, though it is fast dying, and it should not be necessary for India to continue to follow the bull-in-the-China-shop methods which we have too often applied in the name of European civilization, science and progress. If Gandhism is to teach us anything, it should be that sentiment has a place in determining national activity—economic, social and political; and that we cannot and should not ignore it while deciding the practical problems of life.

The above discussion, slight though it is, must have given us an idea that Indian Economy should be approached through those fundamentals which underlie and condition all economic activity in this land, and these are to be found in the economic interpretation of (i) the Indian Geography, (ii) the social customs, (iii) the religious ideas and ideals of her people, and (iv) the various laws that bear upon her economic activity.

EARLY COMMERCE OF INDIA—(I).

DR. L. K. HYDER.

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In the following pages an attempt will be made to present in broad outline a picture of the commercial relations of India with the countries lying towards the West. The period under survey extends from 500 B. C. to 500 A. D. say roughly from the time of Buddha to the end of the Gupta dynasty. The story of the commercial intercourse and the colonial expansion of India in the island-world of the Indian Archipelago and even so far North as China and Japan, by way of the sea, will form the subject of another article. The writer is indebted for the information given here chiefly to Christian Lassen's monumental work, "Indische Altertumskunde." Lassen is the only author, so far as the writer of this article is aware, who has dealt with the subject in a scholarly and exhaustive manner.

The literary sources available for the construction of a history of the early commerce of India divide themselves into two classes, Indian and foreign. In the Indian sources are included the vast thesaurus of literature, religious and secular, and the archaeological records engraved in stone. The foreign sources represent three groups of original documents:—

(1) The works produced by Greek writers of Asia Minor from the latter part of the sixth century to the beginning of the fourth century B. C.

(2) The works based upon the expedition of Alexander the Great in the fourth century.

(3) The works of the Greek ambassadors sent in the third century from Syria and Egypt to the court of

Pataliputra. Besides the foregoing, we possess valuable records of merchants and navigators, who have left their impressions of what they saw in works largely used by later writers.

The history of commerce of a country must deal with the following four points:—

(1) Trade routes and trade centres.
(2) Commodities traded in.
(3) The people who participated in the trade.
(4) The laws and regulations under which the trade was carried on.

TRADE ROUTES AND TRADE CENTRES.

As regards the first of these subjects the preliminary remark must be that trade-routes seldom change, as they depend upon geographical factors, such as the courses of rivers and the trend of mountain ranges. Nowadays conditions may be a little different but in the early times, when invention was not a factor of disturbance, the activity of man was controlled and guided largely by nature. If we examine the railway map of India we find that the trunk lines, for instance, the North-Western Railway and the East Indian Railway, closely follow the alignment of ancient highways of commerce, which may be divided into two classes:

(1) The inland routes—those which linked the different parts of the country to one another; and

(2) The overland routes—those which united her to other countries, such routes being often the continuation of the inland routes.

Regarding the first we know from Indian classical literature as well as from the accounts of Greek writers that there was a high road running from Pushkalavati (Charsaddha) to Embolima of the Greeks, across the Indus to Attock, from Attock to the ancient and renowned city of Taxila, at that time the chief centre of learning and political activity and attracting people to its walls not only from distant parts of India but also from far-off Central Asia. From Taxila the route probably followed the alignment of the N. W. Railway to Nicaea (perhaps the modern town of Jehlum) and from Jehlum to Cakala (modern Sialkot). Crossing the Ravi, the Beas was reached and from the Beas to the Jumna was another stretch. The crossing over the Ganges was probably effected near Anupshahr and then the route lay along the bank of the Ganges to the confluence of the two rivers, the Ganges and the Jumna. Pataliputra was the final stage.

The traders frequently used the rivers for the transport of merchandise and when this method of transportation was not available they travelled in caravans under the guidance of land pilots until either a river or a port was reached. For instance, merchandise from the Punjab and from the adjoining countries towards the North was sent down to Minagara, the capital of Sindh and from there to the port of Barbarikon, all the way down by river. The route just described was the northern route. Another, known as the central and joining the northern at Kaucambi was as follows:—

From Broach (Barygaza of the Greeks and Brigukachha of Sanskrit literature) N. E. to Ujjain 220 miles.

From	Ujjain to Besnagar	120	„
„	Besnagar N. E. to Barhut	185	„
„	Barhut to Kosam or Kausambhi	80	„
„	Kausambhi E. to Benares	100	„
„	Benares to Pataliputra	135	„

Two more routes are described in the Ramayana, one of which was much frequented. From the Ramayana we learn further that the capital of the Pandavas was linked to Ujjain, from which city three more routes issued towards the North, South and East and caravans travelled to the Deccan.

Greek writers mention the fact that the port of Barygaza was connected by a road with Paithana, on the Godaveri, which city was reached journeying southward after 20 days; and another 10 days' marching brought the traders to Togara, in those days an emporium for the inland trade of the Deccan.

The Indians understood the art of road making. The Ramayana gives an elaborate description of the operations necessary in road making; for instance, the felling of trees, the clearing of the thickets and bushes, the levelling of the ground and the bridging of streams. Trees were planted and channels made along both sides of a road for the drainage of surface water. At short distances groves were planted and rest houses built. If objection is raised that this account is taken from a poem, it has to be remembered on the other hand, that we possess direct historical evidence, in the edicts of Asoka, of the construction of roads according to the poetical plan. We know from the testimony of Megasthenes also that the Emperor's officers were directed to build stages and plant groves of shady trees at every distance of 10 stadia.

In respect of the overland routes Afghanistan occupies the most important position. On the eastern land frontier of India the geographical position sets up many obstacles and since southern China was civilized much later than northern China, the intercourse between the two countries was fitful, irregular, and intermittent. Afghanistan was altogether in a different position. The overland route from India passed through the passes of India to Balkh and from Balkh either by river down the Oxus to the Caspian and from the Caspian to the Euxine; or entirely by land, by the caravan road which skirts the Carmanian desert to the North, passes through the Caspian Gates and reaches Antioch. The overland routes were not always open on account of disturbed political conditions.

Besides, the inherent difficulty of transport by land was always present. But the sea-routes were not subject to these disturbing influences and communication was regular and not intermittent.

The oldest sea-route was probably to the Persian Gulf and it is now established beyond doubt that there existed a considerable commerce between India and Babylon. Some authorities place the beginnings of this commercial intercourse as far back as one and a half and even two thousand years before the Christian era; others, notably Mr. Kennedy, assign the fifth century B. C. to the development of intimate commercial relations of India with Babylon.

Intercourse between India and the West by the Red Sea route flourished in the first century before Christ. Three circumstances helped the growth of an active trade :—

(1) The wide extent of the Roman Empire and the love of luxury on the part of the Romans.

(2) The conquest of Egypt in 31 B. C., when it became a province of the Roman Empire. The Romans came into the possession of Alexandria and it became a centre of international trade.

(3) The acquirement at this time by western sailors of a knowledge of the monsoon winds, although the winds had been known from very early times to the sea-faring nations along the African, Arabian, and Indian coasts, for example, the Phoenicians and the Sabeans. Four ports are mentioned :—(1) Kane, on the Arabian coast, the port for that part of Arabia, now known as Hadramot; (2) Mouza; (3) Okelis; and (4) a port on the east coast of Africa, near Cape Gardafui. Some ships sailed to Patala, some to Barygaza and others to the Malabar Coast, known to the Greek and Roman world as Damirike or Limirike. The constant intercourse by sea increased the knowledge

possessed of India by the Western nations and we find them extending their commercial operations to the island of Taprobane (Ceylon) and to the Coromandel Coast.

The author of the Periplus and Pliny mention the following ports in India, to which the foreign ships came:

(1) Barbarikon : the port in Sindh;
(2) Barygaza : Barukachha or Broach;
(3) Sopara;
(4) Kalyan;
(5) Mandagora, probably Bankot;
(6) Palaipatmi, probably Dhabol;
(7) Melizigara, probably Jaigarh;
(8) Byzantium, probably Vizadrog;
(9) Togarum, probably Devgarh;
(10) Muziris, modern Cranganore;
(11) Nelkynda, in the kingdom of Pandyas;
(12) Barake.

The identification of the ports 5-9 in the list, with the qualifying word "probably" has been attempted by Rawlinson in his book: "India and the Western World." Lassen leaves the matter alone.

COMMODITIES TRADED IN.

The preliminary remark has to be made that information about the articles which entered into trade in very early times can only be gleaned from the works of later writers. Besides the Periplus our sources of information are the *Natural History* of Pliny and an ordinance of the Emperors Marcus Aurelius and Titus Commodus Antoninus. There is no doubt that a considerable commerce existed before the period of the authorities just referred to but we have no direct evidence and we must devote our attention to such articles only for which evidence is really forthcoming. A word of caution must be said about the establishment of certain connections of things and their names with the help of comparative philology. Take the words *kastira,* which means *tin* in Sanskrit, and *kassiteros* which also means *tin* in Greek. It has been said that the Greeks took the name as well as the thing from India but the matter is really just the other way about. The Greek word for ivory is *elephas* and the Sanskrit *ibha-danta* : the derivation of *elephas* from *ibha* with the Arabic prefix *el* is in the opinion of some writers etymology at its wildest. Again, take the word *rice,* the Tamil equivalent of which is *arisi* and the Greek *oryza.* Rice was no doubt a staple article of export from India but the derivation of *oryza* from *arisi* is questioned by some authorities, who would derive it from the old Persian *wrinzi,* which is *bhirinj* in modern Persian. A similar difficulty exists with regard to the substance known by the name of *karpasa* (cotton) in Sanskrit and *carpasus* in Latin.

Bearing this caution about deceptive philology in mind, we must now enumerate the chief articles of commerce. Pliny's book gives us full information about the articles imported from India into Europe but is silent on the articles exported from Europe to India. The book of the Alexandrian merchant fills up this deficiency and our information is further supplemented by the decree of the Roman Emperors referred to above.

The Greek and Roman traders imported Indian iron, famed for its excellence. It is worth noting in this connection that the Indian contingent from the Indian Satrapy of the Persian King of Kings fought against the Greeks "clad in cotton garments and armed with cane-bows and arrows tipped with iron" as early as 480 B. C. We must now devote our attention to the precious stones, for which India was famous in the early days. A very large part of her exports to the foreign countries consisted of precious stones. The author of the Periplus says that many precious stones were brought to Nelkynda and exported from there; and Pliny adds the interesting piece of information that India took lead in exchange for the precious stones and pearls, of which he describes the uses and qualities at length. The following precious stones were exported :

(1) Onyxes—an important item of the export trade. In Pliny's opinion the Indian onyxes came next in quality to those found in Carmania. Sardonyxes were also exported. They were found chiefly in the mountain ranges between the Nermudda and the lower Tapti and for that reason Ptolemaios gave the hilly region the name of the sardonyx country.

(2) Amethysts known for their beautiful colour and mildness of lustre.

(3) Opals—perhaps the name is derived from the Sanskrit word *upala.* India was the only source of supply, according to Pliny. As an example of their high value Pliny mentions the following incident: Antoninus proscribed the senator Nonius who took away with him on his flight an opal ring worth 200,000 sesterces. Pliny also mentions the fact that the Indians understood the art of making imitation opals by the addition of glass.

(4) Beryls and sapphires were exported from India, both according to the testimony of the author of the Periplus and of Pliny. Indians were fond of beryls and used them in their signet-rings and for the decoration of the howdahs of their elephants.

(5) Topazes and diamonds. India was the only source for the supply of diamonds. Kautilya in his "Arthasastra" enumerates six different sorts of diamonds and the regions in which they occurred. He says: "The colour of a diamond may be like that of a cat's eye, that of the

flower of *sirisha (acacia sirisa)*, the urine of a cow, the bile of a cow. That which is big, heavy, hard, regular, capable of scratching on the surface of vessels, refractive of light and brilliant is the best. That which is devoid of of angles, uneven, and bent on one side is inauspicious."

(6) Pearls—though not mineral products these may be dealt with here. Pliny says: "They came from Taprobane (Ceylon), were worth their weight in gold, ranked next to diamonds in value and were prized as highly by the Romans as coral was by the Indians." Their value depended upon their colour, size, roundness, smoothness and weight. The Romans of the upper classes, both men and women, appeared in public in a profusion of pearls, hanging from their ears and fingers and invented a new word, *crotalia*, for the jingling of pearls. There was a considerable waste of pearls; for instance, the notorious Cleopatra, in a bet with her paramour Antony as to who could excel in the reckless disregard of riches, threw a pearl worth 10 million sesterces into a vessel containing a quantity of very strong vinegar and drank the mixture with her lover, who thus lost the bet. Kautilya gives the first place to pearls in his description of *ratna* (gems).

Turning now to another category of goods, we find that vegetable products were imported into the western countries, either manufactured or in their natural state. Some of the substances were used in medicine, as appears from the writings of Dioskorides, Claudius, Galenos and Hippocates, all three of whom were eminent Greek physicians. The principal commercial products were:

(1) Rice, exported from Broach to Opone, a port on the African coast, according to the testimony of the author of the Periplus. Wheat was seldom exported but juar or juari *(Holcus sorghum)* was introduced into Italy from India.

(2) Oil of *Sesamum indicum*, an important item, was largely used in medicine.

(3) Cotton and cotton goods. The author of the Periplus uses the word *karpasos* and distinguishes between different kinds: ordinary, superior and very superior yarn and fabrics. Raw cotton was used, according to him, for cushions and mattresses. The information contained in the Roman Digests is more important. According to them *carpasium* means cotton yarn and *carbasia,* cotton fabrics. No cotton was cultivated in Egypt at the time. Even in later times there was no cultivation of cotton. Abdul Latif, a famous Mohammadan physician, traveller, and botanist, gives a detailed account of all the plants of Egypt but makes no mention of cotton. The two islands Tylos and Arados at the head of the Persian gulf produced a little cotton; India thus remains as the important source of supply, both of raw cotton and cotton goods. Greek writers make frequent mention of the wool-bearing trees of India.

(4) Silk. The Digests give full information about the different kinds of silk goods. *Nema sericum* means spun silk; *serica,* silk fabrics; *metaxa,* raw silk; *vestis serica,* garments entirely of silk; *subserica,* mercerised cotton. One of the varieties of silk goods is known as *sericum indicum,* and it thus appears that the monoply of silk was not entirely in the hands of China. The goods were exported from India to the Persian Gulf, to Yemen, and to Adule, in Aethiopia. One pound of silk was equal in value to one pound of gold.

(5) Bamboos and sugar-cane.

(6) Asafoetida, from the port of Barbarikon.

(7) Ebony and cedar-wood.

(8) Dyestuffs, used by dyers and painters: lac and indigo. According to the testimony of the Alexandrian merchant, lac (*lakkos*)-dyed fabrics were exported from India. Indigo was used in medicine and dyeing and its value was 10 denarii per pound.

(9) Spices and perfumes:

(a) Pepper was of two kinds, according to the Roman Statute book, *(i) Piper longum*, black and *(ii) Piper album*, white. The chief ports for the trade in pepper were Muziris and Nelkynda; the latter port was visited by many ships for the excellence of its pepper. Another variety was known as *kothonarinon*. Used in medicine and the Roman kitchen, pepper was in great demand in Europe on account of the luxurious habits of the Romans. Black pepper was inferior in quality, the price of the white variety being 7 denarii per pound.

(b) Cassia, kinnamomon, kardamomen, cloves, and ginger were also exported. The price of ginger was 4 denarii, of cardamoms 10 denarii, of cassia 50 denarii, of cinnamon 25 to 300 denarii per pound respectively.

(c) *Malabathron* or *tamalapatra*, or tejpat of the present day, was also exported. The author of the Periplus gives a very interesting account of its collection by hillmen. The article had a high value in the eyes of the Romans. It was used in medicine, for the flavouring of wine, and an oil was extracted from it also; its price was 10 denarii per pound.

(d) Agallochum, kostos, nard and spikenard, the last mentioned known from the episode in St. Mark, were used for ointments.

Very little information is available from the classical writers regarding the import trade of India. Our chief authority is the Periplus and we can mention the following :—

(1) Mineral products : copper, lead and zinc ; further, articles made of gold and silver and specie, in the shape of gold and silver denarii and other Roman coins. Indian exports being more costly than imports, the balance of trade was always in favour of India and had to be

liquidated by importing coins and the precious metals, a feature of the import trade which is still noticeable.

(2) Articles of glass, consisting chiefly of drinking vessels. Their importation was connected with a large trade in wine, from Italy and from Laodikeia in Syria. The wine was drunk by the Rajas, as religion forbade the use of it to other people.

(3) Stibium, used by women for giving the peculiar black lustre to their eyes.

(4) Coral was imported from Arabia and the Persian Gulf and was prized as highly by the Indians as pearls by the Romans.

(5) Cloth fabrics and girdles, chiefly linen.

(6) Beautiful girls. But they can not be considered as articles of import, although there was a large trade at the time.

The above is rather a scanty list. No information is available for the first centuries of the Christian era and Lassen quotes authors of a later period to show that a considerable trade, subject to few fluctuations, must have existed. At the destruction of the palace of Khusroe Purviz by the Byzantine Emperor Heraklios in the year 627 A. D. a large quantity of aloes, pepper, ginger, many rare spices and sugar, were found. Some of these things were undoubtedly of Indian origin.

PORTS.

Turning to the distribution of trade according to ports, we find;

(1) Mouza, on the coast of Arabia, probably near Aden, imported saffron and exported frankincense.

(2) Opone, on the barbarous coast of Aethiopia, imported rice, asafoetida, sesamum oil, cotton fabrics and sugar.

(3) Aziana. Indians, Greeks, and Arabs had settled on this island, now known as Pemba. They carried on a busy trade; the Indians devoting their attention to rice, wheat, cotton fabrics, and female slaves.

(4) Mosyllon imported cotton fabrics, wheat and oil.

(5) Omana and Apologoi, the Persian Gulf ports, traded in copper, sandalwood, teak, horns, sesamum oil and ebony.

INDIAN PORTS.

(6) Barbarikon, at the mouth of the Indus, the port for Sindh and the Punjab. The imports consisted of girdles, corals, storax, glassware, wine in small quantities, silver articles and specie. The exports were kostos, dellion, nard, Serian skins, cotton fabrics, silk yarn, and indigo. Some of the articles, *e. g.* silk and Serian skins, must have come from China by the overland route.

(7) Barygaza, the most important port on the western coast of India, was visited by a large number of ships on account of the large choice of goods which it could offer. Exports : saffron, lac-dyed garments, onyxes, rice, wheat, sesamum oil, asafoetida, sandalwood, teak, long pepper, kostos, three varieties of nard, cotton yarn and fabrics, silk goods, and, lastly, horns and ivory. Imports : (i) presents of wine, women, and musical instruments and articles made of gold and silver brought by the foreign merchants who were anxious to gain the goodwill of the Prince in whose territory Barygaza was situated ; (ii) ordinary imports, the bulk of which consisted of copper, lead, zinc, white glass, corals, frankincense, wine from Laodikeia and Italy, oils and ointments, and, lastly, silver and gold denarii; (iii) imports from Arabia and the Persian Gulf: dates, purple garments, wine, and slaves.

(8) Muziris and Nelkynda were visited by ships for the excellent pepper, nard, malabathron, diamonds, gems

of all kinds, silk goods, and ivory. The imports comprised copper, lead and zinc, sandarach, white glass, corals, and wine.

PEOPLE PARTICIPATING: LAWS AND REGULATIONS.

Turning our attention now to the people who participated in the trade and the laws and regulations under which this early commerce of India was carried on, we find, both from internal and external evidence, that the Indians did not wait passively at their ports for the arrival of foreign ships but ventured on the ocean themselves and frequented the bazaars of Babylon, bringing back strange notions of coinage and of the alphabet. They settled in the port towns of Arabia and the islands off the coast of Africa, sent embassies to the Roman Emperors, with chiefly commercial objects in view, and built up a large body of rules and regulations, still preserved for us in Kautilya's treatise. The contact of India with the West, which is creating reactions of many kinds at the present day, is not an isolated and novel feature of the last three centuries only; it goes back to very early times and lends strong support to the contention that intercourse, and not isolation, has been the distinguishing feature of the eventful history of this ancient country.

CURRENT NOTES.

OURSELVES.

With this issue the Indian Journal of Economics has, as it were, its rebirth. Started in 1916, as a quarterly journal, it has become nearly an annual in recent years. With the reorganization of the University and the departure of Professor H. Stanley Jevons, who has been its editor since its beginning, the future of the Journal came up for consideration. The staff of the Departments of Economics, Commerce and Geography, now much larger than formerly, decided to continue the Journal, the number of issues to the three during the academic year. Parts Two and Three of Volume IV will, accordingly, be published in January and April 1924, respectively.

We wish it clearly to be understood that the Indian Journal of Economics is in no way an official journal—either of Government of the University of Allahabad. We have no subsidy, from these or other sources. The Journal is published by the staff of the Department of Economics, Commerce and Geography in the interests of economic science and economic welfare in India. It is our aim to present economic facts without fear or favor. There are, accordingly, two sorts of articles which we do not desire and will refuse to publish. First, articles attempting to "whitewash" the economic activities of Government and to prove that it always acts in the best economic interests of the people. Second, articles attempting to show that all acts and policies of Government are in the interests of an exploiting class.

Several sorts of articles there are which we do desire and take this opportunity of requesting our readers to contribute. First, articles of descriptive economics—that is, containing information of interest to economists, business men and political leaders, and aiding in the better understanding of economic conditions and economic welfare. Second, the results of original investigations—facts about present-day economic life not hitherto known to anyone. Third, articles of historical research—for the economic history of India, even of the past two centuries, has yet to be written. Fourth, articles elucidating economic theory, or original contributions to theory. Fifth, articles applying economic theory to the economic problems of the day. Sixth, articles dealing with the sources of economic loss to the people of India, such as labor inefficiency, the cattle problem and lack of industrial training. Seventh, suggestions and plans and outlines useful in the teaching of economics. Eighth, articles on the allied subjects of commerce, geography and sociology.

The articles in this issue are, we believe, fairly representative of these various classes. In the line of historical research, we present Dr. Mann's "A Deccan Village under the Peshwas," and Dr. Hyder's resume of the facts known regarding the early commerce of India with the West; "The Imperial Forest Research Institute of Dehra Dun," by Professor Jevons, is an example of what we have just called descriptive economics; Rev. Lyons' "Economic Geography" and Mr. Bhatnager's "Bases of Indian Economy", are suggestive of methods useful in the class-room; while Mr. Warburton's "The Theory of Distribution." presents a knotty phase of economic theory in a new light.

One of the features of the past issues of the *Indian Journal of Economics* has been a list of the principal articles in English and American economic journals. To this we are adding a list of the important articles on economic subjects in Indian journals. The idea back of this is mainly that of aiding future research. If a man wishes to trace the various articles on a given topic, it is of immense assistence to have something in the nature of an index to periodicals. We hope in the future to make this feature more valuable by giving a brief, two-or three-line abstract of each article.

We are sorry that we cannot publish our proposed "Directory of Economists in India" in this issue, inasmuch as we have been unable to make the list complete. This may by expected, however, in the January issue. We cannot at this time announce the entire contents of the January issue, but we expect Dr. Hyder to have another article on "Early Indian Commerce" and Mr. Bhatnager to continue his "Bases of Indian Economy." Mr. Warburton will continue "The Theory of Distribution" with an article on "The Phenomena of Diminishing Returns." Mr. B. L. Vajpayee has also promised us an article on "Social Insurance among the Hindus."

We would like to remind our contributors that articles intended for the January issue ought to be in our hands by the first of November and those intended for the April issue by the first of February.

UNIVERSITY DEPARTMENT OF ECONOMICS, COMMERCE AND GEOGRAPHY.

Since the publication of our last issue many changes have taken place in the department of economics of the University of Allahabad. With the reorganization of the University, B. A. classes in economics were opened, replacing the same classes in the former B. A. colleges of the city. Professor A. R. Burnett-Hurst, formerly of Muir Central College, became head of the Department of Economics, as well as of the newly organized Department of Commerce. Mr. G. D. Karwal, also formerly of Muir Central College, was added to our staff as a lecturer, and Mr. B. G. Bhatnager continued in the department as a lecturer. Mr. S. K. Rudra, B. A., (Economics *Tripos*), Pembroke College, Cambridge, was appointed reader in Economics, and joined the staff in November, 1922. At the same time Mr. R. K. Vaish M.A. (Allahabad) was added as a third lecturer. In addition to these regular members of the staff, Mr. C. D. Thompson and Mr. C. A. Warburton, of the Ewing Christian College, have assisted in the M. A. work as part-time teachers.

Professor H. Stanley Jevons, research professor of economics, left us in February 1923, to take up his duties as professor of economics and sociology in the Rangoon University. Professor Jevons had been in this university for eight and a half years—during which time the courses of study in economics were vastly improved, the standards raised, the department library built up and the publication of the Indian Journal of Economics begun. His researches and publications during the same period are well known, and we need not enumerate them here. It is, moreover, the services he rendered in organizing the department and in stimulating thought and investigation that we shall most remember here at Allahabad. We deeply regret Professor Jevon's departure, and wish him long years of usefulness at Rangoon.

On account of his health, Professor Burnett-Hurst is spending the academic year 1923-24 on leave in England. In his absence Mr. Rudra, the reader in economics, is executive head of the departments of economics and commerce. Just as these notes go to press we learn of the arrival of Mr. M. K. Ghosh M. A., (Calcutta), B. Com. (Lon.) as reader in accountancy, ready to take the classes in accountancy and business methods in the new commerce course. Mention should also be made of the fact that Mr. A. E. Andrews, M. A. (Oxon.), F. R. G. S., of the Boys' High School, is teaching commercial geography and Professor J. C. Weir, of the Department of Law, is in charge of commercial law.

The Department of Commerce, organised during the past academic year, has now been opened. Other than the men just mentioned, the staff is the same as of the Department of Economics. While small, with four students in the first year and two in the second, we believe that "small beginnings make good endings" and that commerce is going to take its place by the side of economics as one of the popular subjects in the university.

In economics, the students are so many that class organisation has been difficult. The enrollment is 70 in the first year B. A. (formerly the third year B. A.), 75 in the second year B. A. 26 in the M. A. Previous and 18 in the M. A. Final. Arrangement has been made to have each teacher meet all his classes occasionally in small groups, or "seminars." It is expected that these seminars will add much to the efficiency of the teaching.

The Internal Colleges affiliated with the University, the Ewing Christian College and the Kayastha Pathshala, have begun tutorial work with the B. A. and M. A. students, Mr. C. D. Thompson being tutor in economics in the Oxford and Cambridge Hostel (Ewing Christian College), Mr. C. A. Warburton in the Rhea Hostel (Ewing Christian College) and Mr. B. G. Bhatnager in the Kayastha Pathshala. High hopes are being entertained that these beginnings of the tutorial system will be successful and that the system will eventually reach all students of the university. The examinations of the next few years will, we suppose, " tell the tale."

We understand that the Ewing Christian College and the Kayastha Pathshala have offered economics in the Intermediate this year. In the Ewing Christian College it is a very popular subject, 58 out of the 66 Arts students selecting it as one of their subjects.

We are highly disappointed at the abolition of the research scholarships which the University has been offering each year to the best candidate among the M. A. examinees. The only apparent reason for the action is the unfortunate experience we have had of our research scholars dropping out in the middle of the session before the term of the scholarship was over. That our method of selecting the candidate was defective, we realise, for the one who secures the highest marks in an examination is not necessarily the fittest for research, and the result was that scholarship holders began to exploit it as a rare opportunity of preparing for competitive examinations. We feel, therefore, that it was a change in the method of seletion of candidates, rather than the abolition of the scholarships, which was needed.

If the university wants to fulfil its aim of imparting the highest kind of education, if it wishes to justify its recent reorganization and subsequent large expenditure, and if it desires its departments to be on a level with those of other institutions, it must be prepared to do all it can to encourage advanced study and research. If it is felt that we have now reached a stage where men would be coming forward to work for the sake of the training and of an academic distinction, it would be wise to institute a doctorate degree in economics, and perhaps certain other subjects also, along the lines of the degree of Doctor of Letters.

TRADE AND FINANCE.

We note with pleasure the appointment of the Tariff Board, constituted in accordance with the recommendations of the Fiscal Commission. Its personnel consists of Mr. George Rainy, I. C. S., President, Professor V. S. Kale and Mr. P. P. Grinnalla. The appointment of a distinguished Indian professor of economics as a member of the board is a welcome sign of the times and we may congratulate both Government and the public for this selection. The board has already begun its duties, and is now taking evidence to guage the need of the Indian steel industry for a protective tariff.

In our last issue, just a year ago, the writer of "current notes" stated: "During the past twelve months Indian trade has been dominated by the world-wide depression. We are now nearing the end of the cycle of trade—of the long cycle of which the War was the principal feature." So it has proved. In the United States the depression has long been gone entirely; there is little unemployment, volume of production in basic industries and volume of domestic trade are larger than in the boom year 1919, and prices were rising throughout 1922 and the first quarter of 1923. Recently the prices of stocks and shares have dropped considerably and wholesale prices somewhat and business men are taking this as an indication of the approach of the end of the period of "prosperity", and of the beginning of another depression, though probably not a severe one. In Europe recovery from depression has been very slow, but for over a year business has been definitely on the upgrade. French exports and imports, measured by weight, were larger in 1922 than in any previous year of her history, prices have been rising for the past year, and the number of unemployed receiving municipal aid in Paris has steadily decreased. In England, too, prices were rising during the latter part of 1922 and the first part of 1923, production of steel products and foreign trade has increased, and the amount of unemployment has slowly but steadily declined until recent months. In the last few months, however, there have been evidences of a slackening of industrial activity ; it remains to be seen whether this slakening is purely seasonal or whether England is going back into another "depression" without having got out of the last one.

Of India, alas, we can say little, for we do not know what is happening throughout the country. We have very few statistics of employment, no adequate price index, except for the port cities, no statistics of domestic trade nor of domistic production, except in a few isolated cases. Such indices as we do have, moreover, such as foreign trade, bank clearings and prices of cotton mill shares are conflicting. Wholesale prices have been fairly stable for several months, exports have kept up fairly well, but imports have declined during the past few months, leaving a favourable balance of trade. Bank clearings were lower during June and July than in preceding months but this is most likely seasonal. Prices of shares in 65 cotton mills, as reported in the Labour Gazette, have been slowly but steadily dropping for a year and a half. Due to the fairly even balance of trade, after allowing for the imports of treasure, and influenced by the seasonal fall in New York-London exchange and the distribution of the Secretary of State's sales of council bills, there has been little fluctuation in the rupee-sterling exchange. On the whole, about all we can say is that business conditions have become more stable and some of the "depression" phenomena, such as the imports which could not be paid for, have tended to disappear, while others have lingered on. The port cities are doubtless hardly out of the "depression stage," and their connections with Europe seem to be too close to admit of "prosperity" aside from Europe's prosperity. But as to the trade and economic welfare in the rest of India—well, we must admit we know practically nothing about it.

Much is said about the industrialization of India. The tariff commission is investigating the tariff problem with this end in view. Now if this industrialization is to go forward at anything like an even pace, if it is not to be lopsided, too much here and too little there, with a consequent maladjustment of production, and periods of severe depression and huge losses—then we must have an immensely greater knowledge of economic phenomena than we now possess. The establishment in each province of a department such as the "Labour Office" of Bombay would go a long way toward this end. But India needs *unofficial* investigations as well as *official*. There is a great need in India for an Economic Research Institute, similar in character to such institutions in the United States as the Harvard Bureau of Economic Research, the Industrial Conference Board, the National Bureau of Economic Research, the Institute of Economics, the Babson Institute, the Statistical departments of the Federal Reserve Banks and Federal Reserve Board, and the university bureaus of business research. Such an Institute would not cost nearly as much as the Tata Research Institute, and would, we believe, be of equal value to the economic interests of the country. The *Review of Economic Statistics*, published by the Harvard Bureau of Economic Research, has since 1919 foretold by several months the main developments of the trade cycle in the United States. A similar bureau in India could, with the cooperation of the provincial and Central Governments, and of the business men of the country, perform a like service for India. It could also investigate with more care and more freedom than Government departments and with more thoroughness than university professors problems such as the distribution of income among the people, the effects of irrigation projects and railway extensions, the economic aspects of the cattle problem, the problem of an adequate food supply, the economic results of the political relation between India and England, the economic history of India, the alleviation and prevention of famines, the relation between industrial activity and rural prosperity, the possibilities of the distribution to villages of electric power and its utilization in cottage industries.

One of the most important means of economic progress in India is the increasing of crop yields. The following note from Mr. Higginbottom, Principal of the Allahabad Agricultural Institute will therefore be of interest to economists.

> There was a hot weather plowing demonstration held at the Agricultural Institute, Allahabad, for five days beginning Tuesday the 15th of May. Macbeth Brothers of Calcutta and Bombay, Agents for the International Harvester Co., sent one of their new type 15-30 tractors with an ordinary three bottom mouldboard gang-plow and one disk plow and one big prairie breaking plow, and various harrows. The land was very hard and dry and, under the circumstances, taxed the tractor to its fullest capacity. It was noticed as the demonstration proceeded that the ordinary mouldboard type of plow had the point very soon dulled and ground by the resistence of the hard soil and that they needed re-grinding and re-sharpening after about two hours work. This would be impossible on a commercial scale of plowing. The disk plow, on the other hand, when the wheels were very heavily weighted stayed in the ground and did an excellent job of plowing. The disks were not dulled at all. Without the weights on the wheels of the disk plow, the plow would ride out on the ground and a very uneven job was done.
>
> We learned from this demonstration, and previous experience, that in hard dry ground the mould board type of plow becomes dull too soon to pay but where there is irrigation or the ground is moist

this plow is very useful as it completely inverts the soil, burying weeds and organic matter. The disk plow is suited much better for hard dry ground than the mould board plow, but great care must be taken to see that the wheels are sufficiently weighted.

Realizing that important as tractors are in developing the sparsely populated areas of India, what is needed is a plow that can be drawn by oxen and used under ordinary village conditions, our Agricultural Engineer, Mr. Vaugh, tried out several disk plows drawn by oxen. He had his best success with the Spawlding Deep Tilling Tool which is a form of double disk plow. Mr. Vaugh took out one disk and left one; this took six oxen and the ground was plowed from six to eight inches deep and about eight inches on the furrow slice. Again it was found that unless the hind wheel of the disk plow was very heavily weighted this plow would not stay in the ground, but when it was sufficiently weighted an excellent job of plowing with oxen was done.

Every Indian cultivator knows the value of hot weather plowing but where are no irrigation facilities it is impossible for him to do it with his ordinary country plow. He recognizes that good plowing in the hot weather not only kills the weeds but is equivalent to a coating of manure in moist soils. We believe that if co-operative credit societies could buy a disk plow of the right model much more hot weather plowing could be done on un-irrigated land resulting in a great improvement in crop yields. With the ordinary village oxen round the Allahabad district it is estimated that at least five pairs would be necessary to do a satisfactory job.

Modern Economic Thought.

Many of the most important books on economic topics have not in the past been reviewed in our columns. It may not, therefore, be out of place to mention a half-dozen of the more important among the scores of such books published in the post-war period—especially those marking new departures of thought or presenting the distinctly modern point of view of things economic.

With the rapid advance which scientific psychology has made in the last quarter century, it was natural that "classical" economic theory based on hedonism should receive a severe jolt. It was inevitable that with its fundamental postulate so strongly challenged, and one might almost say, so rudely shattered, there should be a period of reshaping of economic theory. The "new" psychology demanded a "new" economics. This recasting of economic theory has been along two lines. Before the war the reaction expressed itself in "price economics"—with perhaps Fetter and Davenport as its chief exponents. "The science that treats of phenomena from the standpoint of price,"—so Davenport defined economics in his "Economics of Enterprise" (1913). Mr. Kleene's comment on Professor Birck's "Theory of Marginal Value" (after the first chapter) might be applied with equal force to these exponents of price economics. "'The psychological scaffolding' is dropped, and we 'operate with tangible factors, the respective ratios of exchange of buyer and seller.' After all it does not make much difference what psychological phraseology is adopted in the study of market phenomena, if we stick to the obvious fact of human choice according to certain schedules."[1] Price economics is distinctly an objective rather than subjective science, and tends more to disregard psychological premises than to build upon them. The other line of recasting of economic theory is based definitely upon the new psychology. It was first expressed in Veblen's well-known works[1] and further developed by such writers as C. H. Parker,[2] Whiting Williams, and Ordway Tead.[3] It has been most completely developed, however, in two recent books—Dickinson's "Economic Motives" and Edie's "Principles of the New Economics".[4] The first of these contains an historical resume of the psychological postulates of economic writers of the past, and then treats with considerable detail and great merit the present-day psychology in its relation to economics. The other book has a title somewhat too ambitious for its scope, as many parts of economic science necessary in a volume of "principles" are omitted or inadequately treated. It is, however, an immensely valuable text for use along with a "neo-classical" or "price economics" text. It is well written and very interesting to read and, for the field which it treats, exceptionally well done. In fact, it stands practically alone among economic texts as one based upon modern scientific knowledge, and written from the twentieth century point of view of the workings of human nature and of social institutions.

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[1] American Economic Review, September 1923, p. 473.

[1] Thorstein Veblen, *The Theory of Business Enterprise*; *The Instinct of Workmanship*; and *Theory of the Leisure Class.*

[2] Carleton H. Parker, *An American Idyll* and *The Casual Laborer.*

[3] Ordway Tead, *Instincts in Industry.*

[4] Z. C. Dickinson, *Economic Motives—A study in the psychological foundations of economic theory, with some reference to other social sciences.* Published by Harvard University Press, 1922.

Lionel D. Edie, *Principles of the New Economics.* Published by Thomas Y. Crowell Co., New York City, 1922.

A monograph of special interest and merit on the wage problem is Hamilton and May's "Control of Wages".[1] It is so immensely superior to any other treatment of the wage problem known to the writer that we cannot too strongly urge its perusal. Related to this in the underlying idea of the possibility and urgent desirability of the conscious control of economic forces are the various works dealing with industrial fluctuations. It is noteworthy that the best of these are those which proceed by statistical analysis of the facts of business activity. Mitchell's "Business Cycles" and Robertson's "Industrial Fluctuations" are both pre-war studies, though the latter was not published at that time. Recently the problem has been attacked anew—"The Stabilization of Business"[2] and "Business Cycles and Unemployment"[3] being the two outstanding publications to date. "Indices of General Business Conditions"[4] is also very valuable as a study of the methodology of analyzing and interpretating the business and industrial facts. Another volume of business cycles may be expected soon from the National Bureau of Economic Research.

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[1] Walton Hamilton and Stacy May, *The Control of Wages*. Published by George H. Doran Co., on behalf of the Workers' Education Bureau of America, New York City, as Volume III of "The Workers' Bookshelf."

[2] *The Stabilization of Business*, by Wesley C. Mitchell, Irving Fisher, Frank Haigh Dixon, John R. Commons, Lionel D. Edie, Edwin R. A. Seligman, John B. Andrews, Walter Dill Scott, Henry S. Dennison. Introduction by Herbert Hoover. Edited by Lionel D. Edie. Published by the Macmillan Co., New York City, 1923.

[3] *Business Cycles and Unemployment*, being the report and recommendations of a committee of the President's Conference on Unemployment and including an investigation made under the auspices of the National Bureau of Economic Research (Washington, D. C., U. S. A.) Published by McGraw-Hill Book Co., New York City, 1923.

The two books by O. Fred Boucke, "The Development of Economics 1750-1900" and "A Critique of Economics: Doctrinal and Methodological"[1] are worthy of close study by advanced students of economics. Indeed, it is only advanced students with considerable knowledge of philosophy who will be able to follow him with understanding and appreciation. Economists will probably disagree as to the merit of the books; certainly there are many things in them open to serious criticism. They should, nevertheless, be carefully and critically read by everyone who wishes to keep in the forefront of the economic thought of the present decade.

C. A. W.

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[4] Warren M. Persons, *Indices of General Business Conditions*, being the January and April 1919 issues of the Review of Economic Statistics published by the Harvard University Committee on Economic Research, Cambridge, Mass. U. S. A.

[1] O, Fred Boucke, *The Development* of *Economics 1750-1900* and *A Critique of Economics: Doctrinal and Methodological.* Published by The Macmillan Co., New York City, 1921 and 1922.

REVIEWS OF BOOKS

RELATING TO INDIA.

An Introduction to Co-operation in India. By C. F. STRICKLAND, I. C. S., London: Humphrey Milford, Oxford University Press. 1922. pp. 75. Price 3s. 6d.

This book forms Volume I of the "India of Today" Series, published under the general editorship of the Central Bureau of Information, Government of India.

It contains a good deal more that what its title would lead one to imagine. It is really an introduction to co-operation itself, though with special and detailed reference to India.

To our mind the merit of the book lies not merely in the clear and able handling of the history, conditions and the future possibilities of co-operation in this country, but in the comparative study the author has made of the subject itself.

In the first instance he has made a comparative study of the co-operative movement and other movements like the socialist and the communist; each of which claims to be the sovereign remedy for the ills of present day society. The ills that are supposed to be eating into the vitals of human society are summed up under three great heads, namely:—"Mis-judgment of Quantity", "Debasement of Quality", and "Labour Discontent". Thus he attempts to impress upon us the true significance of the co-operative movement. He holds that by way of co-operation alone can complete recovery he achieved by human society. He has not failed to point out the final problems which either Socialism or Communism would have to solve, and without the solution of which no assured success can be achieved. But he has in equally clear style brought out the practical difficulties that lie in the establishment of a complete Co-operative regime as the one and only mode of the industrial and economic organisation of the world. These difficulties are just as real and inherent in the nature of man as those which he points out as being the source of hindrence in the final establishment of Socialism or Communism. It could seem to be no less a difficult task to create the co-operative temperament requisite for the establishment of the Co-operative Common-wealth of Nations as to create the large-hearted impulse that would cause men to work as hard and as dis-interestedly for the common good of all as for private gain and profit.

Then the author has given two interesting chapters on the history of the co-operative movement in England and Italy respectively, showing the peculiar development in each. The study made and given to us in these two chapters should prove invaluable to those who have in their hands the shaping of the future of co-operation in India. We shall find in them not a few suggestions for our guidance.

Two of the outstanding evils that seem to have struck Mr. Strickland in Italian co-operation, and which he feels Indian co-operators would do well to take note of are: (1) "It is a disorganisation in every direction: inspection is rare, and lacking in thoroughness; federation is weak and incomplete. There is no Registrar, and annual returns are in many cases a work of imagination". (2) "The disease of political and religious strife has eaten deep into the fibre of co-operation: overlapping societies, sectarian dissensions, and political log-rolling are frequent and pernicious.

The rest of the book is devoted to its real subject, *viz.*, Indian co-operation. Much is packed into a small space. The author speaks from first hand experience, and his observations are pertinent and deserving of serious considerations. He speaks not only with knowledge, but also with intimate sympathy with his subjects, and with the peasant co-operators who form the bulk of the members of the Movement in India.

He says that the simplest form in which the co-operative may be understood by the illiterate or the ignorant person is that of co-operative credit. This is indeed fortunate! for after illiteracy the greatest bane of our country is the heavy indebtedness of our people, and particularly of the peasant class, which form the bulk of our population.

Interesting figures are given for 1922. The number of Co-operative Societies in British India alone are given at about 50,000. Of these 90% are primary agricultural societies; 7% non-agricultural; and 3% Central Banks, Unions and other Secondary institutions. Less than 1,000 of the primary agricultural societies are formed for other purposes than those for credit.

Thus the one-sided development of the movement in India is striking. But it will very probably expand out into other directions as time goes on. In fact there are not wanting signs that this is going to be the case in the future.

In short the book can be well recommended to those who wish to get acquainted with Indian Co-opration, and at the same time obtain a right perspective of Co-operation itself in the scheme of human affairs. Mr. Strickland has certainly done much service to Indian Co-operation by the writing of his unpretentious but really useful book "An Introduction to Co-operation in India".

S. K. RUDRA.

The way to Agricultural progress. By DAYA SHANKAR DUBEY, M. A., F. E. S., Lecturer in Economics, University of Lucknow. Published by Thacker, Spink and Co., 1921. pp. 78. Price: Re. 1.

It is a laudable attempt on the part of Mr. Daya Shanker Dube to indicate the lines for the "rapid improvement of the Economic condition of Indian Agriculture," and we recommend it very strongly to all serious students of Rural Economy in India. In the words of Professoı H. Stanley Jevons, who has contributed a highly appreciative foreword to this book; "The merit of this book is that it gives a comprehensive survey of the whole problem of agricultural progress..and draws our attention to the most important of the handicaps and grievances under which the Indian cultivators labour." The way in which he has approached the problem, and the remedies suggested all indicate that the author has intimate knowledge of the agricultural conditions and is enthusiastic about their amelioration One may not agree with all the suggestions that he has put forward to improve India's agriculture, yet one cannot help admiring his zeal, freshness and originality of thought. We understand that he is still continuing his investigations in this wide field of study. We may therefore, not unreasonably, look forward for something that will add to our information on the subject and give us new lines of thought on it.

B. G. BHATNAGAR.

The Indian Currency and Exchange Problem. By JWALA PRASAD SINGHAL, M. A., LL. B., Published by Vidyasagar Depot. Aligarh City. pp. 168. Price: Re. 1.

In this small book, the author has tried to give us an idea of how an ardent Indian Nationalist of the forward school, would like to approach the currency problem of this land. After giving us a brief history of currency in India, he passes on to discuss the present conditions, and studies in detail the recommendations of the Babbington-Smith Currency Committee. After giving thought to all these points he comes to the conclusion that unless India adopts Gold Standard with gold coins in active circulation, there is very little hope of her ever attaining the much-too-desired stability of Exchange. We are one with the author when he recommends adoption of gold as internal currency; but we disagree with him when he recommends its immediate adoption, and we are sure that a more detailed and scientific study of the subject, specially the post-war currency conditions, would lead him to revise his own opinions in this matter.

B. G. BHATNAGAR.

Our Fiscal Policy. By C. N. VAKIL, M. A., M. Sc. (Econ., London), Department of Economics, University of Bombay. Second edltion, revised and enlarged. Bombay: Taraporevala & Co., 1923, Price: Rs. 4.

This work is divided into three parts, historical, comparative and constructive.

Part I deals with the history of Indian Fiscal Policy, and is a somewhat short and rapid review of the main features beginning only from about the mindle of the last century. This is undoubtedly one of the merits of the book. It avoids investigation into minute details, which often make the reading of tariff history heavy and irksome. Further, the history of this entire period is divided into four parts, thus making it easy for the reader to grasp the various stages through which the tariff history of this country has passed up to the present time.

Part II is a comparative study of British Fiscal Policy, particularly in relation to the Dominions. To our mind the chief value of the work lies in this comparative treatment of the subject. It is an aspect of the problem which we in India have so far largely neglected, or only considered superficially; and yet it is a study which we need to pursue; it will not be without its reward. Prof. Vakil is to be congratulated for having drawn attention to the significance of such a study. He writes: "We talk of Dominion Status for India. Political and fiscal freedom in the Dominions have advanced side by side. A study of the main features of the Dominion Fiscal Policy and especially of the struggles which the Dominions had in achieving fiscal independence is therefore, of great interest to us at this juncture in our history".

In this part of the book he has given us long quotations from original correspondence between the Dominions and the British Government, and for which he says he makes no apologies. He has need to make none. On the contrary, we are thankful to be allowed to get at the sources directly. The selection of passages seems to have been made with scholarly fairness, untouched by propagandist bias usually displayed by those making large use of extracts and quotations.

The Galt Tariff passed by the Canadian Legislature in 1859, according to Prof. Vakil, is a landmark in the fiscal history of the Dominions, because it makes clear that each member of the empire would aspire to regulate its tariff policy, in the measure that it achieved autonomy, mainly according to its own fiscal interests, and not according to the mandates of the Mother Country.

In the correspondence that ensued between the Colonial Secretary and the Canadian Government over this Tariff Act the following extract seems to contain in itself the crux of the position. Thus writes the Canadian Finance Minister: " The Provincial Ministry are at all times ready to afford explanations in regard to the act of Legislature to which they are party ; but subject to their duty and allegiance to Her Majesty, their responsibility in all general questions of policy must be to the Provincial Parliament—and in the imposition of taxation it is so plainly necessary that the Administration and the people should be in accord, that the former cannot admit responsibility or requires approval beyond that of the Local Legislature. Self-Government would be utterly annihilated if the views of the Imperial Government were to be preferred to those of the people of Canada". This is the aim of the Indian Legislature too.

The question of Imperial preference is also very thoroughly and completely treated.

In the concluding Part of his book, Prof. Vakil deals critically with the Report of the Fiscal Commission. Afte reading this portion of the book one remains in no doubt whatsoever as to the author's views on the subject; but it is a moot point whether an academician should so clearly permit his feelings to appear from beneath his arguments.

S. K. RUDRA.

Factory Labor in India. By RAJANI KANTA DAS, PH. D., Berlin: Walter De Gruyter & Co., 1923. Pp. 216. Price: 6*s.*

This book by a lecturer in economics of the New York University is a well written summary of the rise of factory labor in India and of the problems connected therewith up to 1920. In fact it deals with some of the topics under consideration up to the passage of the Factories Act of 1922. But Mr. Das' lack of access to recent literature and, more especially the changes which have taken place during 1922 and 1923 (such as the passage of the Workmen's Compensation Act) in the conditions of which he treats makes the book already out of date in many respects. It is, nevertheless, a book which every student of labor problems in India should read.

Topics discussed are as follows: rise of factory labor, factory discipline, hours of work, health and safety, industrial efficiency, remuneration, standard of living, factory legislation and labor organization. Particularly valuable is the section on comparative labor turnover. Labor turnover is not, it appears, a more serious problem in India than in other countries. Doubtless the data in India is very meagre, but in the few instances for which Mr. Das found statistics, the annual rate of turnover varied from 68.7% to 98.6%, while the average rate of turnover in the United States is about 100%, according to the careful investigation of Dr. Summer H. Slichter. In regard to most of the other problems discussed, Mr. Das has added little, if anything, to the facts already known, but he has collected together facts and statistics which were scattered throughout many volumes of English and Indian Government publications. There are now available, at least for Bombay Presidency, much more exact and more recent figures than Mr. Das gives regarding absenteeism, wages, hours of labor, and the standard of living, but his tables are, nevertheless, of considerable value and do not appear, when compared with these more exact figures, to be unreliable. The statement however, (page 201) that wages did not, during the war, rise in the same proportion as the cost of living and the statement (page 126) that the family of the average factory worker is, as a rule, larger than four, are not borne out by the investigations of the Labour Office.

In one or two respects the author seems ignorant of the facts in India, as, *e.g.* when he speaks of the proposal made in 1907 for a separate room and a nurse for the care of young children and does not seem to be aware of the fact that many of the factories in India now have creches.

There are many misprints in the book, for which, of course, the "errata" at the back only partially atones. The word "cost", also, should be substituted for "expenditure" in the statement (p. 122) that "the adjustment of the relative use of machinery and labor in business depends upon the relative expenditure of the commodities". We doubt, besides, if the loss of political and economic independence (see p. 154) can be held responsible for India's illiteracy.

C. A. W.

Hindustani Workers on the Pacific Coast. By RAJANI KANTA DAS, Ph. D. Berlin: Walter De Gruyter & Co. 1923. Price: 4s.

The result of an investigation conducted for the United States Department of Labor, this little book will be of considerable interest to Indians in general. It discusses the Indians in the Western United States and Canada under the following chapter headings: immigration, geographical distribution, occupational classification, employment and unionism, conditions of work, industrial efficiency, wages and income, standard of living, social life, traits and achievements, principal problems.

We note with satisfaction the use of the term Hindustani (pl. Hindustanees) "to include all classes of people in India irrespective of their religion." Due to the fact that the Red Indians or American Indians are commonly called "Indians" in the United States, it has become customary in America to speak of all people from India as "Hindus". Mr. Das deserves our congratulation in introducing the term "Hindustanees" a term which is linguistically correct and which will at the same time avoid confussion.

The Hindustanees, then, in America, in number approximately 10,000 and natives, largely, of the Punjab, are located mainly in the Pacific Coast states of California and Washington and the province of British Columbia. The majority of them, it appears, are farm operators; others are itinerant farm laborers, or lumber mill workers, with a few business men and laborers in other industries. That they are effficient workers seems to be agreed upon, and while not competing to a great extent with the Chinese and Japanese, seem to be at least as efficient, if not more so. They are paid at the prevailing wages for American labour, (higher than Chinese or Mexican labor, when there are differential rates) and their income, averaging above nine hundred dollars a year, is not far from the average income of all Americans.

It is not possible here to review other features of the book, save to say that the reader will find it full of interesting details about the life of the Hindustani workers on the Pacific Coast.

There are a number of misprints, most of them, however, obvious misspellings which do not destroy the sense.

It is as an American, with considerable though not intimate knowledge of the facts treated therein, that I recommend this book as a very fair and accurate description of the social and economic conditions of the Hindustanees on the Pacific Coast of America.

C. A. W.

Indian Export Trade—A Critical Analysis. BY, R. M. JOSHI, Professer of Indian Economics, Sydenham College of Commerce and Economics, Bombay. Published by the author. 1922. pp. 195. Price: Rs. 3-8-0.

A review or handbook of the Indian Export Trade, rather than a "critical analysis," this book is a very useful compilation of information hitherto scattered through a number of government publications, especially the volume of the Review of Trade of India. The many charts add greatly to the utility of the book, presenting in one view, what, in their absence, one could learn only by reading a number of pages.

In general, the presentation of the facts, both in the text and the charts, is well done. Two or three points we might mention, however. First, Chart No. 1 would have been far more useful had yearly instead of quinquennial figures been used, for then it would have shown any tendencies toward periodic fluctuations, which are of such great importance to the business man and of such interest to the economist. Second, it would have been desirable to have used Indian measures or, at least, a uniform set of measures throughout, instead of using millions of rupees in one place, crores in another, and pounds sterling in other places. Third, the usefulness of the book for reference would have been increased by numbering all the tables and charts and including a list of them in the table of contents.

If, as the title would seem to indicate, this book was intended as a serious study of the economics of the Indian Export Trade, it must be considered very inadequate. There is little in the interpretations which is above the common-place comments made by ocmmercial magazines and in the Reviews of Trade of India. oN attempt is made to study either seasonal or cyclical fluctuations—both very important aspects of foreign trade. One wonders, too, when the author has taken so much pains as to draw separate charts for most of the leading exports, why he did not continue his study to 1921, so that the war and postwar periods could be compared and contrasted with the pre-war period. Surely changes in exports throughout the years 1914-20 are of as great interest and value to the business man and to the economist of to-day as those of pre-war years.

Perhaps, however, the author's aim was only to furnish a handbook useful to students of commerce and commercial geography, rather than to bring forth a piece of original research. If so, the author has succeeded admirably, and we would only suggest that the book should not have been called "a critical analysis."

C. A. W.

REVIEWS OF BOOKS.

ENGLISH AND FOREIGN.

The Control of Industry. By D. H. ROBERTSON. London: Nisbet and Co., and Cambridge: University Press. 1923. Pp. 169. Price: 5s.

This is the fourth in the series of Cambridge Economic Handbooks, and is at least equal in merit to the preceding velumes. It is a well-written summary of the typical factory-capitalist economic organisation and of present day proposals to alter that organisation.

A little more than half the book is devoted to a description of the important elements of industrial and commercial organisation, discussing such topics as the rise of modern capitalism, standardization and specialization in relation to large-scale industry, localization, integration and combination in relation to large-scale production, the organization of marketing, the capitalization of industry, the relation between finance and industry, the nature of the present industrial control, and the relation between risk and control.

In all this the author has succeeded well in compressing so many topics into such small space, and the faults to be noted are mostly of omission under pressure of room. We venture to suggest, however, that it would be more accurate to say that "the sharpness of the cleavage between the few who command and the many who obey" is the distinctive mark of the capitalist-wage system rather than of the factory system (see page 11-12), and that "the substitution of the complicated and expensive machine for the simple hand-driven tool" is the leading feature of the machine system rather than of the factory system. True, the term "factory system" has frequently been used to designate the whole machine-factory-capitalist-wage system, but we sadly need the term for its real meaning of congregated labor, and it is highly desirable that we frankly recognize our present economic system to be a machine-factory-capitalist-wage compound. Then we will be able to see clearly that the dissatisfaction today is not so much with the machine-factory system as it is with the capitalist-wage system, and that such attempts as Russian collectivism and "workers' control" are designed to modify or replace the latter while leaving the former substantially unchanged.

Two points brought forth deserve especial note and emphasis. "It is the economics," Mr. Robertson says, (see page 25), "of large-scale government rather than of large-scale technique which dictate the size of the modern business unit." This is too often forgotten. When we read (page 28-9), "It is doubtful whether a disinterested visitor from another planet would approve, as the Englishman cannot but approve, of the queer dispensation by which American cotton is spun and woven for Indians in Lancashire," we may add that neither do the Indians approve.

The latter part of the book, with discussions of consumers' cooperation, collectivism, communism, workers' control, is on the whole a fair, though very brief, comparison of the merits and demerits of there sorts of control with the merits and demerits of capitalistic control. There are no general conclusions vouchsafed, but we gather that the author does not see any single solution of the problem of control. Rather, one gathers, the future lies in becoming more collectivistic in certain respects, more communistic in others, with a greater degree of consumers' control in some places, and of workers' control in others, and nowhere complete separation of control from ownership.

C. A. W.

RECENT PERIODICALS.

ENGLISH AND AMERICAN.

THE ECONOMIC JOURNAL.

March 1922

The Definition of National Income. By A. L. Bowley.

The Alleged Exhaustion of the Soil in Medieval England. By R. Lennard.

Internal and External Purchasing Power of Paper Currencies. By C. F. Bickerdike.

Knapp's Theory of Money. By James Bonar.

Reconstruction and Monetary Reform. By L. L. Price.

The Internal Purchasing Power of the German Mark. By M. Elsas.

June 1922

Communication Costs and their Interdependence. By Sir W. M. Acworth.

The Polish Mark in 1921. By J. H. Penson.

American Views on the European Problem. By D. H. Macgregor.

The Bank Crisis in Italy. By Piero Sraffa.

September 1922

The Genoa Resolutions on Currency. By R. G. Hawtrey.

Of Empty Ecnomic Boxes. By J. H. Clapham.

Trade Boards and the Cave Committee. By A. C. Pigou.

The Increase of Population in the Eighteenth Century as Illustrated by London. By M. Dorothy George.

December 1922

Equal Pay to Men and Women for Equal Work. By F. Y. Edgeworth.

Empty Economic Boxes: A reply. By A. C. Pigou.

Profit-Sharing and Co-Partnership. By J. H. Bowie.

The incidence of Unemployment by Age and Sex. By Felix Morley.

The Survival of the Small Unit in Industry. By I. F. Grant.

Prof. Cassel on Money and Foreign Exchange. By E. Cannon.

March 1923

Motives and Standards in Industry. By. D. H. Macgregor.

Grouping Under the Railways Act, 1921. By Sir W. M. Acworth.

Wheat, Flour and Bread Prices. By E. G. Mears.

The Indian Fiscal Commission. By F. Lavington.

Prof. Jevons on the Indian Exchange. B. J. M. Keynes.

An Eighteenth-Century Combination in Copper Mining.
By G. C. Aleen.

June 1923

Metallic and Non-Melallic Standards of Money.
By Verrijn Stuart.

The Situation in the Ruhr. By H. Schumacher.

Prices and Wages from 1896-1914. By A. C. Pigou.

Recent Researches in Industrial Fatigue. By P. S. Florence.

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January 1923

The Relations of Capital and Labour, 1922-1923. By Lord Emmott.

Changes in the Birth Rate and in Legitimate Fertility in London, 1911-1912. By T. T. S. De'Jastrzebski.

March 1923

Statistics of Employment Derived From the Working of the Unemployment Insurance Act. By John Hilton.

Wholesale Prices of Commodities in 1922.
By the Editor of "The Statist".

THE BANKER'S MAGAZINE.

January 1923

The Future Course of High-Class Investment Values.
By A. H. Gibson.

Monetary Review.

The International Financial Position.

February 1923

Credit And Trade in 1922.

The Present Economic Situation in Germany.

March 1923

Trade Depression and Industrial Nationalism. By Harold Cox.

The Money Market Since The War.

April 1923

The Effect of Reparation Problem and International Debts upon the Foreign Exchanges and International Trade.

June 1923

Investment Values and Conversions By A. H. Gibson.

Agricultural Credit.

JULY 1923

The Progress of Banking in Great Britain and Ireland During 1922.
Currency and World Prices.

THE JOURNAL OF POLITICAL ECONOMY.

FEBRUARY 1922

The Revolutionary Cycle in Syndicalism. By D. A. MACGIBBON.
The Incidence of Compulsory Insurance of Workmen. By HARRY GUNNISON BROWN.
Bank Reserves and the Call Money Loan Rate. By LAWRENCE H. SELTZER AND SEWARD L. HORNER.

APRIL 1922

Succession Duties in Canadian Provinces. By W. C. KEIRSTEAD
The Minimum Wage in Canada. By KATHLEEN DERRY AND PAUL H. DOUGLAS.
The Personal Policies of the A. Nash Company. By WILLARD E. ATKINS.
French Finances and Economic Resources. By SAMUEL MACCLINTOCK.
Russian Vage Systems under Communism. By AMY HEWES.

JUNE 1922

Human Nature in Economic Theory. By REXFORD G. TUGWELL.
A Combined Secondary and College Curriculum. By L. C. MARSHALL.
The Growth of the "Service Idea" in Selling. By HARRY D. KITSON.

AUGUST 1922

Britain's Economic Outlook on Europe. By JOHN A HOBSON.
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Early German Slave Trade. By JAMES WESTFALL THOMPSON.

OCTOBER 1922

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Iron and Steel and Japanese Policies. By ABRAHAM BERGLUND.
Dumping in International Trade. I. By JACOB VINER.
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English Agriculture Since 1914. III. By REGINALD LENNARD.
Overhead Costs in Modern Industry. By J. MAURICE CLARK.
Provincial Taxation in Canada. By W. C. KEIRSTEAD.
International Patent Legislation. By ROYAL E. MONTGOMERY.

APRIL 1923

The Life and Work of Simon Nelson Patten. By REXFORD G. TUGWELL.
Overhead Costs in Modern Industry. By J. MAURICE CLARK.
The Liquidity of Bank Earning Assets. By WALDO F. MITCHELL.
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Labor Adjustment. By PAUL H. DOUGLAS.
Financing Business through Commercial Paper Issues. By S. P. MEECH.

JUNE 1923

Loyal Legion of Loggers and Lumbermen. By E. B. MITTELMAN.
The International Investment Market. By HAROLD D. LASSWELL.

THE AMERICAN ECONOMIC REVIEW.

MARCH 1922

The Economist's Spiral. By JACOB H. HOLLANDER.
The State of Our National Finances. By EDWIN R. A. SELIGMAN.

MARCH 1922, SUPPLEMENT.

The Crisis of 1920 in the United States: A Quantitative Survey. By WARREN M. PERSONS.
The Crisis of 1920 and the Problem of Controlling Business Cycles. By WESLEY C. MITCHELL.
The Present Position of American Trade Unionism. By GEORGE E. BARNETT.
Constitutional Goverment in American Industries. By W. M. LEISERSON.
The Railroad Situation. By WALKER D. HINES.
The Core of the Railroad Problem. By LOGAN G. MCPHERSON.
The Present Status of Workmen's Compensation in the United States. By E. H. DOWNEY.
Industrial Accident and Compensation Statistics. By CHARLES H. VERRILL.

Round Table Conferences:

The Teaching of Elementary Economics.
Marketing—The Chain Store Grocer.
The Relation Between Economics and Ethics.

JUNE 1922

Guild Socialism: A Two Years' Test. BY AMY HEWES.

What Determines the Volume of a Country's International Trade
By HERBERT FEIS.

German War Finance—A Review. By FRED ROGERS FAIRCHILD.

Foreign Trading Zones in our Seaports. By EDWIN J. CLAPP.

SEPTEMBER 1922

A Popular Theory of Credit Applied to Credit Policy.
By ANNA YOUNGMAN.

Commercial Importance of Russia. By ALONZO E. TAYLOR.

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Unique Situation in Economic Theory. By O. FRED BOUCKE.

Some Recent Problems in Public Utility Valuation and Regulation.
By SHIRLEY D. SOUTHWORTH.

The Course in Elementary Economics. By JOHN ISE.

MARCH 1923

Company Unions v. *Trade Unions.* By HENRY R. SEAGER.

The Tariff Act of 1922. By ABRAHAM BERGLUND.

Economic Conditions in Europe. By H. G. MOULTON.

European Financial Situation and Remedies.
By BENJAMIN M. ANDERSON, JR.

Constructive v. *Dollar Diplomacy.* By HENRY BRUERE.

Stabilization of Europe. By IRVING FISHER.

Some Notes on the Relation of Money and Prices.
By S. S. GARRETT.

Effects of Further Gold Imports on Our Banking Situation.
By E. A. GOLDENWEISER.

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The Probable Trend of Rate of Interest and Investment.
By H. PARKER WILLIS.

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Commercial Rent as an Expense and Its Relation to Profits.
By HORACE SECRIST.

Local Factors in Connection with Labor Turnover.
By ANNA BEZANSAN.

Wage Theories and Wage Policies. By JOHN R. COMMONS.

The Standard-of-Living Factor in Wages.
By William Fielding Ogburn.
The Productivity Factor in Wage Determinations.
By George Soule.
The Course of Agricultural Income during the Last Twenty-five Years. By David Friday.
Accumulation of Wealth by Farmers. By L. C. Gray.
Do Principles of Large-Scale Production Apply to Merchandising?
By. L. D. H. Weld.
The Proper Sphere of Governmental Regulation in Connection with the Marketing of Farm Products. By E. G. Nourse.
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Aims and Methods of Bureaus of Business Research.
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Suggestion for Determining a Living Wage.
By Dorothea Davis Kittredge.
The Circuit Velocity of Money. By Hudson B. Hastings.
"*The Course in Elementary Economics*": Comment.
By F. A. Fetter, C. E. Persons, H. T. Collings, and E. E. Day.
Effect of Open Price Association Activities on Competition and Prices. By Milton N. Nelson.
The Stabilization of Gold: A Plan. By Carl Snyder.

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JANUARY 1922

Review of the Trade of India in 1920-21.
The World's Sugar Situation in 1920 and the Present Position, By KASANJI D. NAIK.

FEBRUARY 1922

The Indian Fiscal Commission. By R. P. SABNIS.
Agricultural Income of Madras Presidency.

MARCH 1922

Economic Reconstruction in India. By S. SUBBARAMA AIYAR.

APRIL 1922

Some Impressions of the Co-operative Movement in England, By ALBERT J. SAUNDERS.
Indian Fiscal Commission and Mysore. By P. G. D'SOUZA.
The Indian Budget, 1922-23. By SIR MALCOLM HAILEY.

JULY 1922

Indian Income-Tax Act.
Indian Prosperity. By SIR ALFRED CHATTERTON.
The All-India Industrial Conference. By G. M. BROUGHTON.

OCTOBER-NOVEMBER 1922

Permanent vs. *Long Term Assessments.* By SIR H. BUTLER.
The Standard of Living in India. By MADAN MOHAN VARMA.
The Sugar Trade in India during 1921. BY KASANJI D. NAIK.

JANUARY 1923

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Indian Cooperative Movement, 1920-21. By C. T. RAO.

APRIL 1923

The Indian Budget, 1923-24. By SIR BASIL BLACKETT.
Fodder Question in India. By S. MILLIGAN.

MAY 1923

Population and Food Supply in India. By P. P. PILLAI.

Hindustani Workers on the Pccific Coast, By RAJANI KANTA DAS.
The Indian Trode in Cotton and Cotton Goods.
Shortage of Labour Supply for Industries, By B. N. GOKHALE.

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MARCH 1922

Indian Budget for 1922-23.
Economics of Indian Railways, By C. S. DEOLE.
Indian Railway Finance, By R. M. JOSHI.
Welfare Work, Trade Unionism, and Co-operation, By N. L. KAJI.

JUNE 1922

Indian Military Expenditure, By C. S. DEOLE
Economics of Education, By S. N. PHERWANI
Famine Insurance Grant, By C. N. VAKIL.

SEPTEMBER 1922

Food Exports from India, By PARPHULLACHANDRA BASU.
The Madura Gilds—A Type, By K. R. R. SASTRY.
The "Milch Cow" Debate in the Legislative Assembly,
By R. M. JOSHI.

THE WEALTH OF INDIA.

MARCH 1922

Control of Rents, By S. SOONDARARAJA AIYANGAR.
The Sugar Industry in India, By SESHAGIRI RAO.

JUNE 1922

Minimum Wage in South India, By SUNDARARAJA AIYANGAR.

SEPTEMBER 1922

The Fiscal Commission Report—A Summary.

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Agricultural Income of the Madras Pesidency,
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The Economics of Indian Labour, By B. K. BHATTACHARYA.

LABOUR GAZETTE.

MARCH 1922

Composition of Bombay City Population, By L. J. SEDGWICK.
Indian Factories Amendment Act, 1922.

APRIL 1922

Report of the Industrial Disputes Gommittee.

JUNE 1922

Scavengers' Budgets.
Trade Unions in the Bombay Presidency.

NOVEMBER 1922

Indian Mines Act Amendment.

JANUARY 1923

Wage Census in the Cotton Industry—Summary.

MARCH 1923

Working Class Budgets in Bombay—Summary.
Maternity and Child-welfare—Legislation in Foreign Countries.

APRIL 1923

Workmen's Compensation Legislation—The Act.

MAY 1923

Legislation on Indian Mines—The New Act.

JUNE 1923

Factory Legislation in Japan—The New Act.

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FEBRUARY 1922

The third International Labour Conference, By A. G. CLOW.

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Chambers of commerce, British and foreign, By J. K. MEHTA.
Welfare Work in Indian Mills and Factories, By G. M. BROUGHTON.
Census of Production in the United Kingdom, America and Canada, By D. N. GHOSH.

NOVEMBER 1922

The Workmen's Compensation Bill, By A. G. CLOW.

FEBRUARY 1923

Some Thoughts on Indian Labour, By K. C. ROY CHOWDHRY.

THE AGRICULTURAL JOURNAL OF INDIA.

JANUARY 1922

Co-operative Consolidation of Holdings in the Punjab, By H. CALVERT.
Cow Protection, By W. SMITH.

MAY 1922

The Study of Agricultural Economics, By C. S. ORWIN.
The World's Cotton Crops in 1921, By J. A. TODD.

SEPTEMBER 1922

The Cattle Question in India, By J. MATSON.

JULY 1923

The Cattle Problem of the United Provinces, By H. M. LEAKE,

BENGAL, BIHAR AND ORISSA CO-OPERATIVE JOURNAL.

OCTOBER 1922

A Bengal District's Choice between Life and Death: The Story and Lesson, By G. S. DUTT.

JANUARY 1923

Co-operative Consolidation of Holdings, By OTTO ROTHFELD.

Rural Reform, By S. C. RAY.

APRIL 1923

The Co-operative System and the Financing of Agriculture.

A Select Bibliogrophy of Co-operative Literature in India and Abroad.

THE CALCUTTA REVIEW.

JANUARY 1923

State versus Company Management of Indian Railways, By S. C. GHOSE.

FEBRUARY 1923

Measurement of Changes in the Cost of Living in Bengal, By NALINAKSHA SANYAL.

Acworth Commitiee's Report, By S. P. MUKHERJEE.

MARCH 1923

Economic Aspect of the Indian Rice Export Trade, "SALBURD."

Railway Management, By S. P. MUKHERJEE.

APRIL—MAY 1923

Report of the Fiscal Commission, By AKSHAYKUMAR SARKAR.

JUNE 1923

The Permanent Settlement.

THE HINDUSTAN REVIEW.

MARCH 1922

Economic Culture as Depicted in Valmiki's Ramayana, By J. N. SAMADDAR.

APRIL 1922

Indian Fiscal Commission and the Problem Before It, "VOX POPULI."

The American Woman in Industry, By INA SALOME DELO.

OCTOBER 1922

State Management of Railways, By B. M. DADACHANJI.

APRIL 1923

A Study in Indian Industrial Development, By SAROJRANJAN BOSE.

	31st January 1922	28th February 1922	31st March 1922	30th April 1922

ABSTRACT OF THE ACCOUNTS OF THE
(Lakhs of

Total amount of Notes in circulation	1, 74, 40	1, 73 89	1, 74, 76	1, 71, 76
RESERVE				
Coin and Bullion (*In India*)	..	..	..	..
Silver Coin	70,28	71,72	72,96	71,95
Gold coin and Bullion ..	24,32	24,32	24,32	24,32
Silver under coinage ..	4,55	4,56	4,56	4,56
Securities (*at purchase price*):—				
Held in India ..	69.39	67,43	65,08	65,09
Held in England ..	5.85	5,85	5,85	5,85
Internal Bills of Exchange	..	..	2,00	..
Total ..	1,71,40	1,73,87	1,74.76	1,71,76

BALANCE OF THE GOLD STANDARD REVENUE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH.

1. Gold in India ..	..	..	..	..
2. Cash placed by Sec. of State at short notice..	805	2,804	1 775	3,791
3. British and Colonial Securities ..	18,793,609 (*valued as on 30th Sept. 1921*)	17,740,899	40,140,132 (*valued as on 31st March 1922*)	27,718,648
4. Securities since purchased (*cost price*)	21,592,660	22,694,642	..	12.670,268
Total ..	40,387,074	40,138,345	40,141,907	40,392,707

BALANCE HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE IMPERIAL BANK AND ITS BRANCHES—BANK RATES—EXCHANGE—SILVER, ETC.

Treasury Balances (Thousand of rupees) ..	15,87,48	8,08,39	25,69,50	19,69,78
Bank Rates (per cent)				
Imperial Bank of India..	7	8	8	7
Bank of England ..	5	4 1/2	4 1/2	4
Exchange Rates (s. d.)				
On Demand	1 3 23/32	1 3 9/32	1 3 7/32	1 3 3/16
Telegraphic Transfer ..	1 3 11/16	1 3 1/4	1 3 3/16	1 3 5/32
3 Months'	1 4	1 3 1/2	1 3 7/16	1 3 4/32
6 months'	1 4 5/16	1 3 5/8	1 3 11/16	1 3 19/32
Government Paper (3½ p. c.)	56 1/4	55 3/4	55 1/2	57 1/2
Bar Silver in London (Pence)	35 1/8	32 3/8	34 1/8	34 7/8

31st May 1922	30th June 1922	31st July 1922	31st August 1922	30th September 1922	31st October 1922

DEPARTMENT OF ISSUE OF PAPER CURRENCY.
Rupees.)

31st May 1922	30th June 1922	31st July 1922	31st August 1922	30th September 1922	31st October 1922
1,72,39	1,76,01	1,80,41	1,82,26	1,80,76	1,79,63
..	..	..	..	..	..
72,50	76,17	80,53	83,76	85,11	86,54
24,32	24,32	24,32	24,32	24,32	24,32
4,56	4,56	4,56	4,56	4,56	4,56
65,17	65,12	65,15	63,78	60,92	58,37
5,85	5,85	5,85	5,85	5,85	5,85
..	..	..	..	..	..
1,72,39	1,76,01	1,80,41	1.82,26	1,80.76	1,79,63

BALANCE OF THE GOLD STANDARD RESERVE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH.

31st May 1922	30th June 1922	31st July 1922	31st August 1922	30th September 1922	31st October 1922
..	..	..	..	..	..
1,712	2,427	362	3,986	782	4,019
20,275,917	11,401,467	11,401,467	11,272,467	40,034,060 *(valued as of 30th September 1922)*	21,519,196
20,159,069	29,098,599	29,178,258	29,384,840	..	18,532 183
40,436,698	40,502,493	40,580,087	40,625,293	40,031,060	40,055,398

BALANCES HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE EMPERIAL BANK AND ITS BRANCHES—BANK RATES—EXCHANGES—SILVER, ETC

31st May 1922	30th June 1922	31st July 1922	31st August 1922	30th September 1922	31st October 1922
20,82,31	20,91,56	37,17,95	30,68,54	17,11,85	16,72,00
7	5	4	4	4	5
4	3 1/2	3	3	3	3
1 3 3/4	1 3 21/32	1 3 11/16	1 3 17/32	1 3 19/32	1 3 11/16
1 3 23/32	1 3 5/8	1 3 21/32	1 3 1/2	1 3 9/16	1 3 21/32
1 3 29/32	1 3 13/16	1 3 27/32	1 3 23/32	1 3 15/16	1 3 27/32
1 4 5/32	1 4 1/16	1 4 1/32	1 3 29/32	1 3 25/32	1 4 1/32
58 1/4	58	57	57 1/4	58 1/2	58
36 1/2	36 1/8	35 1/4	35 1/8	35 3/8	33 15/16

	30th November 1922	31st December 1922	31st January 1923	28th February 1923
ABSTRACTS OF THE ACCOUNTS OF THE *(Lakhs of*				
Total amount of Notes in circulation	1,77,30	1,74.18	1.72,65	1,73, 9
RESERVE				
Coin and Bullion (*In India*)	..	..	..	..
Silver Coin	85,16	82,04	80,50	81,73
Gold Coin and Bullion..	24,32	24,32	24,32	24,3.
Silver under coinage ..	4,56	4,56	4,56	4,56
Securities (*at purchase price*)				
Held in India ..	57,42	57 42	57,43	57,43
Held in England ..	5,85	5,85	5,80	5,85
Internal Bills of Exchange	..	..	..	..
Total ..	1,77,30	1,74, 8	1,72,65	1,73,89
BALANCE OF THE GOLD STANDARD REVENUE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH.				
1 Gold in India ..	..	..	..	..
2 Cash placed by Sec. of State at short notice..	3,519	1,765	2,983	2,388
3 British and Colonial Securities ..	13,595,637	3,149,796	3,149,796	3,149,796
4 Securities since purchased (*cost price*) ..	26,491,708	36,991,059	37,057,597	37,129,359
Total ..	40,090,846	40,142,620	40,210,376	40,281,542
BALANCE HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE IMPERIAL BANKS AND ITS BRANCHES—BANK RATES—EXCHANGE—SILVER, ETC.				
Treasury Balances .. (Thousand of rupees)	16,78,85	17,61,02	22,01,74	21,52,60
Bank Rates (per cent.)				
Imperial Bank of India..	5	7	8	8
Bank of England ..	3	3	3	3
Exchange Rates (s. d.)				
On Demand	1 4	1 4 1/8	1 4 17/32	1 4 3/16
Telegraphic Transfer ..	1 3 31/32	1 4 3/32	1 4 1/2	1 4 5/32
3 Months'	1 4 5/32	1 4 9/32	1 4 11/16	1 4 11/32
6 Months'	1 4 3/16	1 4 15/22	1 4 7/8	1 4 17/32
Government Paper (3 1/2 (p. c.)	58 1/8	57 7/8	56 7/8	58 7/8
Bar Silver in London (pence)	32 1/8	31 9/16	31 7/16	31 3/4

31st March 1923	30th April 1923	31st May 1923	30th June 1923	31st July 1923	31st August 1923

DEPARTMENT OF ISSUE OF PAPER CURRENCY.

Rupees.)

1,74,70	1,73,37	1,71,23	1,72,38	1,75,72	1,76,30
..	..	..	..	..	..
82,50	79,09	79,01	80,15	85,48	89,91
24,32	24,32	24,32	24,32	24,32	24,32
4,56	4,56	4,56	4,56	4,56	4,36
57,48	57,55	57,50	57,50	57,51	57,51
5,85	5,85	5,85	5,85	3,85	..
..	2,00	..	..	..	..
1,74,80	1,73,37	1,71,23	1,72,38	1,75,72	1,76,30

BALANCE OF THE GOLD STANDARD REVENUE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH.

..	..	..	..	..	..
3,658	4,649	107	1,526	1,685	3,820
				8,469,863	8,469,863
40,043,831 *(valued as of 31st March 1923)*	30,783,495	19,954,126	8,469,863		
..	9,331,325	20,190,454	4 ,734,509	31,732 448	31,871,678
40,047,489	4,118,469	40,144,687	40,205,988	40,203,996	40,345,361

BALANCE HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE IMPERIAL BANK AND ITS BRANCHES—BANK RATES—EXCHANGE—SILVER, ETC

25,96,26	18,76,40	16,12,74	15,93 77	12,76,48	..
8	8	6	4	4	4
3	3	3	3	4	4
1 4 1/8	1 4 3/16	1 4 1/16	1 4 3/32	1 4 1/16	1 4 1/16
1 4 3/32	1 4 5/32	1 4 3/32	1 4 3/32	1 4 1/16	1 4 1/32
1 4 1/4	1 4 11/32	1 4 1/4	1 4 9/32	1 4 9/32	1 4 1/4
1 4 7/16	1 4 17/32	1 4 7/16	1 4 15/32	1 4 1/2	1 4 1/2
60 7/8	63 1/4	65 1/2	64 1/8	65 1/8	65 3/4
32 13/16	33 3/16	32	31 1/16	30 7/8	30 15/16

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INDIAN
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A LAND MORTGAGE BANK.

RICHARD BURN, I. C. S.

Board of Revenue, United Provinces.

In 1913 a financial crisis in Northern India led to the closing of several ordinary joint stock banks. The liquidation proceedings showed that the conduct of their business had differed from that of an English or Scottish bank, in that a considerable proportion of the funds available from deposits at call or for a short fixed term had been lent on the security of land or buildings. As a result of the shock those banks which survived became more chary of placing money on mortgage, and when the Great War began in 1914 credit was still further curtailed. Persons in Northern India who wish to borrow money on the security of land experience far more difficulty in obtaining loans than they did ten years ago. There is a clear opening for a bank which would provide specially for this class of business while safe-guarding itself against the factors which make it dangerous for an ordinary bank to lock up money in mortgages.

Simply stated the problem is to attract money on long term deposit, to arrange for accurate and inexpensive verification of title and security, and to ensure that money raised is completely and continuously invested, so as to bring in a return. These requirements had been satisfactorily met many years before the war by the Nobles' Government Land Bank in Russia.[1] A more recent experiment is the system begun in the United States of America under the authority of the Federal Farm Loan Act, passed on 17th July 1916.[2] The essential feature of both institutions is that money is borrowed on long term bonds and lent on mortgage at a higher rate of interest, the difference being usually one per cent. From the margin are met expenses of management. In Russia where the Bank was a Government institution any further profits gained were applied to the reduction of debt. In the United States the Banks must carry to reserve 25 per cent of net earnings each half year until the reserve amounts to 20 per cent of the outstanding capital. Subsequently only 5 per cent need be so allotted, and the balance is available for distribution to share-holders.

As the American system was devised after careful study of the working of banks of this type in various European countries, a more detailed description is needed. The preamble of the Act includes among the objects of legislation the provision of capital for agricultural development, the creation of standard forms of investment based on farm mortgage, and the equalization of rates of interest based on farm loans. Two distinct classes of institutions have been formed, the Federal Land Banks which provide for the needs of the small land-owner, and have some elements of co-operative principles, and the Joint-stock Land Banks, which have larger transactions, and work more nearly on ordinary banking lines. Control over the administration of the act is vested in a council of five, known as the Federal Farm Loan Board, which is attached to the Department of the Treasury at Washington, the Secretary to the Treasury being *ex officio* Chairman of the Board. The remaining four members, who are whole time salaried officials, are appointed by the President. In selecting them he is limited by the proviso that not more than two shall be chosen from one political party.

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[1] A full account of this is given at page 77 of the 'Monthly Bulletin of Economic and Social Intelligence' for September 1914.

[2] Described at page 689, 'The Economist' 21st April, 1917. An account of the working during the first 2 or 3 years was reprinted from The Economist' at page 100 'Agricultural Journal of India' XV part, 1

For the purposes of the Act the whole area of the United States was divided into twelve districts. A Federal Land Bank was constituted for each district, and if necessary branch banks will be formed within the same area. Joint-stock Land Banks, however, are incorporated in a State, and their operations are limited to that State and one adjacent State. The working of the Federal Land Banks depends on the formation of National Farm Loan Associations. An association may be formed of ten or more persons. Each member must be possessed, or about to become the owner, of land suitable as security for an advance. Loans by a Federal Land Bank are made only to members of an association and on the recommendation of the association. They must be used only for specific purposes such as purchase of new land, of stock, or of fertilizers. A borrower must hold stock in the local association equal to 5 per cent of the loan applied for, but provision is made to enable the member to obtain from the Federal Land Bank the necessary cash to purchase this stock. A loan must not be for less than $100 or for more than $10,000. Its term must lie between 5 and 40 years, and its amount may not exceed 50 per cent of the land mortgaged plus 20 per cent of the value of permanent improvements. Loans made by a Joint-stock Land Bank are not limited in amount, but are subject to approval by the directors of the bank and by the Federal Farm Loan Board.

For each Federal Land Bank a capital of $750,000, in shares of $5 each was fixed. For 30 days subscription lists were open to the public. Any capital not taken up privately was subscribed by Government. Shares owned by individuals or corporations rank for dividend, while those standing in the name of Government receive nothing. On the other hand each share held by Government or by a Farm Loan Association carries a vote, and private share holders have no voice in the administration. The Farm Loan Associations have gradually taken over the Government shares, as when a loan was made the association had to subscribe a sum equal to 5 per cent of the loan to the stock of the Bank. This gradual acquisition of capital carried with it an extension of popular control over the working of the Bank. At the outset management of a Bank was entrusted to five directors selected by the Federal Farm Loan Board from residents in the district. When the stock owned by National Farm Loan Associations in a Federal Land Bank amounted to $100,000, the number of directors was increased to nine, six of these being chosen by directors of the associations and three continuing to be appointed by the Board. Each director must have been resident in his district for at least two years and, if the Federal Farm Loan Board approves, may be paid for his services.

Joint-stock Land Banks have a freer constitution. Share-holders have votes and the chief restriction is that business may not begin until a capital of $250,000, has been subscribed, of which at least half must be paid up. When that stage is reached a charter will be given by the Federal Farm Loan Board.

Further funds for providing loans are obtained by the issue of bonds for which the mortgages already taken form collateral security. These bonds are in denominations of $25, $50, $100, $500 and $1000, in series of not less than $50,000. They are for specified minimum and maximum periods, subject to retirement at the option of the Bank. They can be issued only with the authority of the Federal Farm Loan Board, and the issue is regulated by a Farm Loan Registrar appointed in each district. A Joint-stock Bank cannot issue any bonds until its entire capital is paid up. The total issue of bonds by a Bank at any time is limited to 20 times the capital in the case of Federal Land Banks and to 15 times in the case of Joint-stock Land Banks. There are simple provisions for increasing the original capital and thus providing for the issue of fresh bonds, when the original borrowing powers are exhausted. Both classes of Banks may receive deposits of public money, subject to the approval of the Secretary of the Treasury. As Government funds may not be invested in farm loan bonds or farm mortgages such deposits do not add to the resources of the Bank. No other deposits of current funds payable on demand may be received except from a Bank's own stock-holders.

Bonds were at first issued bearing interest at 4½ per cent but later it was found necessary to raise this to 5 per cent. On loans the rate of interest must not exceed the rate fixed for the latest issue of bonds by more than one per cent. Bonds issued by any of the twelve Federal Banks are secured by the joint liability of all twelve. A Joint-stock Land Bank is liable only for its own bonds. Although the State is intimately concerned with control and supervision it undertakes no liability. It has been held by the Supreme Court, however, that the bonds are 'instrumentalities' of the Government. It is not clear what general effect this ruling has, except that it declares the bonds free of all taxation except inheritance taxes. While the constitution of National Farm Associations and their relations to the Federal Land Banks have some affinity to the case of primary credit societies and district banks in the Indian co-operative system an important difference must be noted. It is expressly provided by the act that the liability of a share-holder in an association for contracts, debts and engagements of that association is limited to the extent of stock held by him at par value in addition to the amount paid in and represented by his share.

The new system has been immensely popular. Within 2 or 3 years from the commencement of the act the Federal Land Banks had lent more than $ 160,000,000 while the Joint-stock Land Banks had issued about $ 50,000,000. Public issues, which were arranged through ordinary financial houses, were taken up almost immediately. In Russia it was the practice to make over the bonds to the borrower who disposed of them as he pleased.

In suggesting the organization of Land Banks in India regard must be had to a number of factors, which differ from those affecting the problem in other countries. First among these is the question of the title of the land-owner. The needs of the cultivator in *zamindari* provinces or in the *ryotwari* provinces of western and southern India may be excluded. These can best be supplied in present circumstance by co-operative credit societies, or by the Government system of *taqavi.* In several provinces moreover the cultivator has no saleable interest, and cannot legally encumber his holding. Laws of inheritance, the absence of a compulsory system of registration of marriages, births, adoptions (except the taluqdars of Oudh) and deaths combine to throw frequent doubts on the security of title, while the lack of restraint on champertous suits gives opportunities which wealthy blackmailers have readily taken. In the United Provinces there are few large estates the title to which has not been challenged once at least since the establishment of British rule. Such difficulties of verification do not exist in America. In Russia branches of the Nobles' Bank were frequently under the same management as the corresponding branches of the Peasants' Bank, the work being done chiefly by functionaries of the latter. It is significant that in England solicitors who are in touch with local conditions are the chief agents in collecting and placing money invested in mortgages.

Another salient feature of the position in India is that the demand for money secured on land is not chiefly dictated by useful aims such as those for which loans are limited under the American Act. It is true that money is often borrowed for the purchase of fresh land, but far greater debts have accumulated through litigation, mismanagement, general extravagance, and misfortunes due to bad seasons which had not been provided against or promptly repaired. Borrowing for remunerative improvements or for increasing stock is still inconsiderable, though Government is already willing to lend money for such purposes at rates which are probably as low as a Land Bank could offer. These considerations are so real that when a scheme for a Land Mortgage Bank was discussed by some astute landowners a few years ago they contemplated asking that the owners of heavily indebted estates should entrust the management to their association during the subsistence of a mortgage. Such an arrangement would not suit a solvent landowner who wished to borrow for purchase of new land.

It is obvious that neither type of the American Banks is directly suited to Indian conditions[1]. A Bank on the lines of a Federal Land Bank could not deal cheaply and efficiently with applications for small loans for improvement or purchase of stock, such as could be obtained from Government under the Land Improvement Act. An official executive staff is already available to make preliminary enquiries into title and encumbrances, to inspect the progress of the work for which an advance is required, so that instalments of the loan are not diverted to other objects, and finally to ensure punctual repayment. There would be considerable objections to allowing a Bank to make use of the services of the district executive staff, owing to the danger of friction, delay and lack of responsibility as Government could not give any guarantees to the Bank. Unless the Banks can provide money more cheaply than the money lender and promptly they cannot be a financial success, and until business is developed by the existing Government system the Banks would not have enough to do. Loans for purchase of new land are not immediately likely to supply the deficit. The science of Agronomics is still too little known to have stimulated men of the land-owning class. Purchases are generally made from hoarded capital, or by the money lending classes. At the present stage of co-operative development little help is likely to be obtained from co-operative credit societies. To be of assistance they would need knowledge and authority, but both these would be lacking. If loans were strictly limited to useful purposes such as the purchase of land and improvements more assistance could, however, be obtained from the landowners' associations which are establishing a certain position, though their activities have not yet proceeded in this direction. The operations of the agricultural department, and the diffusion of education have had an effect on the land-owning classes, and the provision of cheap capital would undoubtedly tend to facilitate the transfer of land to more capable hands than those from which it is slipping. Recent settlement reports in the United Provinces indicate that in spite of many transfers the land-owning castes are maintaining their aggregate holdings. Special enquiries undertaken by Government a few years ago showed that mismanagement and indebtedness were less serious than had been popularly believed.

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[1] I refer more particularly in the following remarks to the United Provinces, with which I am most familiar.

While the establishment of Joint-stock Land Banks though desirable, would be a doubtful experiment at present, there is an opening for such a Bank with a specially limited scope, which would test the market for investment and help to familiarize the idea. Its charter should be framed so as to enable it to extend its operation when its success has justified this. The Bank proposed would, in the first instance, be limited to lending money to the Court of Wards in a single province. A Bank constituted for a group of provinces would have a wider field for the collection of capital, but difficulties would arise when operations are extended and loans begin to be made to landowners whose estates are not under the management of the Court of Wards.

The powers and functions of the Court of Wards are regulated by acts of the provincial legislature and vary from province to province. In the United Provinces the administration is vested in the Court of Wards (which at present is the Board of Revenue) subject to the general control of Government. If an estate falls into the hands of certain classes of proprietors, management may be assumed, if there is good reason to believe that management by the proprietor would not be successful. Estates in this category are chiefly those belonging to females or minors. A major owner who declares himself incompetent to manage his own affairs may apply to the Court of Wards to administer his estate. Lastly, it is open to Government to direct a formal enquiry into the indebtedness of an estate, and if it is found that the interest on the debt exceeds a certain proportion of the net income of the estate, to authorize management by the Court of Wards whether the owner desires it or not. In deciding whether an estate should be taken under management various factors are considered. While the disintegration of a large estate invariably causes distress to the tenants it is not advisable to interfere in every case. It is clearly right to preserve an ancient name when there is a young heir who may be trained to bear it more wisely than his predecessor. On the other hand it may be found, when application is made, or when enquiries are directed, that debts cannot be paid in full except by tedious liquidation and the sale of almost the whole of a property. The Court of Wards is naturally reluctant to assume the function of a liquidator in bankruptcy proceedings. The fact remains that a considerable number of the estates managed by the Court of Wards in the United Provinces are burdened with debt. During the last 15 years the aggregate debt owed by such estates has never been less than 1½ crores and it has approached 2½ crores. Only a comparatively small portion has been incurred for productive purposes and the balance has been a dead weight to be slowly reduced by careful management. When an estate is taken over it is usually found that the rate of interest payable on its debts is higher than the rate at which the Court of Wards can borrow on behalf of estates under its management. Old debts at high interest are therefore paid off by new loans. Before 1913 ordinary joint-stock banks were glad to invest some of their resources in this way. In one particular year when the total debt approached two crores the percentage held by different classes of creditors was as follows:—

(1)	Joint-stock banks	30.
(2)	Government	23.
(3)	Solvent estate under management	13.
(4)	Educational and similar endowments	12.
(5)	Miscellaneous	22.

Both figures for Government and miscellaneous creditors were unusually large. As a rule Government does not lend money to clear estates from debt. Several very exceptional loans had been made immediately before the year taken as an example. Since 1913 the proportion lent by joint-stock banks, has been considerably reduced, and at times the Court of Wards has had difficulty in obtaining single large sums.

It has been suggested above that the business of lending money to estates under Court of Wards management is safer than lending on mortgage to an ordinary landowner. Joint-stock banks used to give to the Court of Wards better terms than they offered to the public. It is well known that although the Court of Wards gave no guarantee, no losses were incurred. For the improvement of the security there are in fact special reasons. Chapter IV of the U. P. Court of Wards Act (IV of 1912) lays down a definite procedure for ascertaining the indebtedness of an estate. The date of assumption of charge is notified publicly. Claims against the estate which are not preferred within six months of that date are extinguished. The claims are enquired into by the district officer before admission by the Court of Wards. Thus a bank is saved tedious and expensive enquiries into title and encumbrances. After admission of a debt the district officer may reduce the amount of interest payable on it for a period not exceeding two years, during which the Court of Wards has time to raise a fresh loan at leisure. When the preliminary enquiries show that an estate is involved to such an extent that little or nothing can be saved a fresh debt is not incurred and the estate is released, so that there is practically no danger of a bad debt. There are also certain restrictions on the discretion of the Court of Wards which increase the security of the creditor. Priority is ensured for the liquidation of debts on the estates over all other classes of expenditure except charges necessary for maintenance and education, for management and supervision and for public demands or sums payable to a superior proprietor. When steps have once been taken for the liquidation of debts and liabilities, and liquidation is not yet complete, the Court of Wards may not relinquish charge without previously obtaining the sanction of Government. If a dispute arises about succession, the Court of Words can institute an interpleader suit or arrange for arbitration. All these provisions unite to make the safety of a loan secured by mortgage on an estate under Court of Wards management as strong as is conceivable without a Government guarantee. Difficulties which have arisen in the last 8 or 9 years are due, not to any deterioration in the security, but to the realization in India of the principle always followed in England and Scotland, that banks accepting deposits at call must be chary of locking up money in mortgages.

There is every reason to believe that the bonds would have a ready market. Indian War loans have proved attractive to a degree which had never been anticipated. Provincial loans in Bombay and the United Provinces have also attracted investors. Shares and bonds in the proposed Bank would have the tangible security of mortgages. A joint-stock bank could take up such bonds without embarrassment, as they would be readily saleable and divisible. They would be considered attractive by insurance companies. Co-operative Credit Societies at present place idle money in fixed deposits in joint-stock banks. If a sudden emergency forces them to withdraw this money before due time they lose any interest which has accrued. Solvent estates under the management of the Court of Wards are hampered by the rigid but necessary, restrictions on the manner in which their surplus funds may be invested. They cannot deposit money in ordinary banks, and many have balances which lie idle until a suitable mortgage can be arranged or a village comes into the market.

It is therefore suggested that legislation should be undertaken to enable Banks on a provincial basis to be chartered for financing estates under Court of Wards management. It would be obligatory on the Court of Wards in a Province for which such a Bank was constituted, to apply to the Bank in the first instance. The grant of a loan would of course be at the discretion of the Bank. No restriction would be made as to the purpose of the loan, for it has already been shown that the bulk of the money would be needed for repayment of debt already incurred. A capital of five lakhs would suffice at first, with provision for issue of bonds, when that was all used, up to a maximum of one crore. It should be possible to increase the capital when that became necessary. The American provision regarding formation of a reserve in the case of Federal Land Banks should be followed. Bonds should be issued through the Imperial Bank of India and should bear interest at a rate one per cent lower than the rate at which loans are made. It would be unnecessary for the Bank to handle any cash except for salaries and expenses of the head office if Government would make two concessions. Estates under Court of Wards management at present bank with Goverment treasuries. It is a simple extension to allow treasuries to receive subscriptions for capital or bonds and instalments of principal repaid, and to make interest on shares and bonds payable at treasuries. The directorate should include one Government representative, but otherwise should be elected by the share-holders.

While it is suggested that the Bank should at first lend only to Court of Wards estates, it is desirable to take power to extend its operations, when a suitable reserve has been accumulated, to landowners who desire to purchase fresh land or make improvements. It would no doubt be preferable to constitute a separate bank for this purpose. But, while a small genuine demand has already arisen it is not sufficiently large to justify the formation of a separate institution. On the other hand, if the possibility of an extension to include this class of business is contemplated, it should be clearly before subscribers to the Court of Wards Bank from the outset. It has been explained above that the smaller needs of landowners are already provided more cheaply by the Government Agency for grant of loans than could be done by a private bank but it is permissible to look forward to a time when land Banks working perhaps with Co-operative district banks will relieve Government officials of this business also. I expressly refrain from discussion here of a bank with power to lend money to indebted proprietors whose estates are not under management to enable them to get free from debt. Such a scheme would probably include the grant of powers to the Bank to acquire a usufructuary mortgage of the estate and to arrange for its management.

THE ECONOMIC VALUE OF THE PREVENTION OF DISEASE

Lieut.-Col. C. L. Dunn, I. M. S.
Director of Public Health, United Provinces

1. At the present time when, owing to financial stringency, the various Provincial Governments in India are reducing largely the amounts budgeted for Public Health purposes and in certain provinces are even advocating the ill-advised and disastrous step of abolishing their Public Health Departments altogether, it is urgently necessary for sanitarians to do what they can to prove the value of Public Health work. As they say in business circles, "Money talks", I will, therefore, try to indicate the cash value of a portion of the work done by an adequate, trained, and efficient Public Health staff, the entertainment of which appears to the uninitiated as of doubtful value.

2. After two years as Director of Public Heath under the reformed Government in the United Provinces, I think I may claim to have gained a fair experience of the difficulties to be dealt with in convincing the Government, the Legislative Council, District and Municipal Boards, and the mass of the people in general of the economic value of Hygiene and Prevention of disease.

3. The value of the cure of disease has been understood from the earliest times for the reason that its benefits are obvious and concrete, so that the meanest intelligence can appreciate the results obtained in a successfully treated case. In spite, however, of the enormous advances made in the diagnosis of disease and in its treatment, even the best surgeons and physicians cannot cure a considerable proportion of the cases they

are called upon to treat. The only sure cure is to prevent the occurrence of these diseases.

Similarly in the early days of Prevention of Disease, when their causation was either totally unknown or imperfectly understood, little success was obtained. With the great advances made in the sciences of bacteriology, protozoology and biochemistry during the last 50 years, a totally different state of affairs has supervened. It is now possible to stamp out almost entirely many terrible diseases. As the results of the work of Jenner, Pasteur, Koch, Kitasato, Noguchi and many others abroad and of Ronald Ross, Rogers, Greig Mackie and others in India, we now do know the causes and methods of prevention of a very large number of epidemic and endemic diseases, but there still remains an enormous field for research for the workers of the present and the future. Unfortunately the causation of disease and the methods of prevention in each case are only known to comparatively few and the results of the application of these methods are seldom concrete and obvious. The proofs produced by columns of figures are usually received with scepticism by the educated classes and cannot be produced in evidence to the illiterate masses. It is, therefore, very difficult to prove that money budgetted annually under the head of "Public Health" is really effecting an economic gain, and that a much larger sum of money spent in this way would result in still further profit to the community and to the exchequer. It is my object to endeavour to make this fact clear in this paper.

4. Now what is the economic value of human life? It is the loss which the community sustains by the death of a human being. This obviously must be a very variable quantity. The deaths of incurable lunatics, incorrigible criminals, those suffering from incurable and incapacitating diseases and even the aged and senile inflict no economic loss on the community, but on the

contrary, result is an economic gain. No civilized nation, however, would advocate the painless immolation of these parasites on the community on the grounds of economy, although such action has been advocated in the case of at least the first three of these categories. Disease, however, is no respecter of persons, and the healthy and useful members of society are wiped out in even greater proportion by the common epidemics than the above mentioned categories.

This is due to the fact that incurable lunatics and prisoners usually live by compulsion in hygienic surroundings and are thus sheltered from disease while the aged and senile have usually, by long exposure to disease, acquired immunity. Again the loss of the highly intelligent and highly trained leaders of the people, such as great thinkers, research workers, organisers and administrators cannot be estimated in mere currency, so that to fix a cash value on human life, we must arrive at an average figure.

5. It may be argued that the death of large numbers of average persons annually, although fit and well, is an advantage otherwise the country will be overcrowded. This is as great a fallacy as the theory of some trade unions and employee's that they must restrict output or the result will be greater unemployment. This practice actually causes unemployment, as the workman following it out is not working up to his economic value with the result that the article he produces rises above its economic price and becomes unsaleable. The people who can afford to buy this article have less to spend on other goods, causing unemployment in other industries.

There is employment for all, if the economic laws are strictly adhered to. In India, all the raw materials required for the great industries are available in the country, while the industrial population is infinitesimal compared with the population of the whole country.

Where is the labor to come from for the great industrial future which public men foretell for India? It could only be with drawn from the agricultural population in which the surplus at present is practically nil with the result that the agricultural population would be unable to produce the food supply for a huge industrial population, and a resort would have to be made to the importation of food with a consequent rise in the cost of living.

This has occurred in England with results that are well known. We may take it, therefore, *that the wealth of the country will increase proportionately with its population* for sometime to come in an undeveloped country like India. As the resources of the country are developed, the wealth per head of the nation should very largely increase, as it has in all other countries. Historically wealth and population have increased side by side whenever there has been industrial and agricultural progress.

6. Having dealt with this fallacy, it remains to fix an average cash value to human life as a basis for calculations. The average income per head of the population in India must be the average annual value of human life. It is not possible, however, to make a reasonable estimate of this sum in India as it is in England. I will therefore base my calculations on the revenue value of life which can be given exactly, though it is only a fraction of the income. The value of each human life to the provincial exchequer in the United Provinces is the total revenue divided by the population. The revenue in round figures is Rs. 150,000,000 and the population 46,000,000 so that the revenue per head per annum is roughly Rs. 3-4. In addition to this the value of each life to the imperial revenues is about Rs. 6-8 as that is approximately the imperial taxation per head of the population. The total revenue value of life is therefore Rs. 9-12 per annum. Now the average number of deaths occurring annually

in the United Provinces, taking the figures for the last five years is roughly 2,000,000 so that this represents an annual loss of revenue of Rs. 19,500,000, while the provincial expenditure is only about Rs. 1,400,000 on public health.

How much of this loss is preventable?

Comparing the death rate of the United Provinces with that of England and Wales, we will see that the death rate in the latter country averages one-third that of the United Provinces. The figures are 39 and 13 respectively. It may be said that a great deal of this is due to climate. I contend that this is not so, and that if the laws of health were regarded in India to the same extent as in England, and the same proportion of money was spent on Public Health, the death rate in India would be no larger than in England.

We only need to peruse the vital statistics of other tropical countries administered on the same lines as England to find proof of this contention. It is in fact not necessary to go outside India for the proof; the vital statistics of Christians in India are quite sufficient to clinch the argument.

In the United Provinces the death rate among Christians is only 6·55 per mille. This is in a Christian population of 200,000. Many of these are, however, adult male Europeans, among whom the death rate is exceedingly small; but many, however, are Indian Christians.

Again, take the death rate in the Indian Army. It is about 10 per mille on the average. This is of course among males passed fit originally and almost all between 18 and 45 years of age.

For purposes of comparison we can take the male death rate in the general population between the ages of 20 and 40. This is 21.5 or double that of males of the same age in the Indian Army and all due to the latter living under more hygienic conditions.

I think if we fix the preventible death rate at half the present death rate, we are allowing a liberal margin for possible error. A loss in revenue to Government of Rs. 97,50,000 is, therefore, preventible. This lower death rate should be attainable under present conditions, but the low death rate of England would not be reached however, until the standard of knowledge and education in India is as high as it is in England. This must be a slow and gradual process.

7. There are many measures which can be immediately introduced to attain our object which are well within the bounds of practical politics.

The chief causes of easily preventible mortality in the United Provinces are small-pox, cholera and plague among the great epidemic diseases, and malaria and respiratory diseases among the endemic diseases. The other and greatest cause of mortality of all is the infantile mortality, which is not due as a rule to any one specific disease, but to unhygienic social customs, ignorance and neglect.

Small-pox is being to a certain extent adequately dealt with, but plague and cholera need much more money spent on their prevention than at present, and it would be a sound economic principle to do so.

With regard to malaria and respiratory diseases, the finances of the country will not permit of much more being done at present, as the limiting and controlling of these diseases would be very expensive. Amelioration of the conditions causing these diseases can only be expected by precept, propaganda and education which will eventually, we hope, result in a demand for the eradication of their causes.

The reduction of the huge infantile death rate is however possible without the expenditure of a large amount of money. I will take these great causes of mortality seriatim, and endeavour to estimate the cost of their control and gradual eradication.

8. *Small-pox.* As stated above a more or less adequate organization in the shape of the vaccination establishment already exists for dealing with small-pox, so that epidemics are now almost unheard of. In the past, however, this disease was a far worse scourge than cholera. The economic result in the case of this disease provided a striking example of the value of making adequate provision for its control. The cost of the vaccination establishment in the United Provinces is Rs. 4,66,363 per annum. On this sum Rs. 2,44,172 is met from provincial funds and includes the pay of the establishment of the four Assistant Directors of Public Health on general duty. The rest is met from local funds. As I am dealing only with the economic value of human life to the Government and not to local funds, this latter figure is the one used in my calculations.

At present, deaths from small-pox average only 4,000 per annum. What the death rate was in the days before vaccination it is impossible to say, but as practically every one got the disease, the rate must have been enormous.

Taking a very low figure which must be well below the actuals, if the rate was only twice that of cholera, viz: 1,76,000 per annum, the saving in lives is now 1,72,000 representing an addition of Rs. 16,38,000 to the revenues for an annual expenditure of Rs. 2,44,172.

9. *Cholera.* In the case of small-pox I have shown that the measures taken are effective and I will endeavour to prove that the methods in force and advocated to control cholera would also be effective.

Cholera from 1908 to 1921 annually caused an average of 88,000 deaths. Now cholera in the average Indian village is an easily controlled and preventible disease. The cause is the *Cholera vibrio* which gains access to the body always by the mouth, chiefly in water, but also in food and also by infection from the fingers. In the year 1912, I devoted a considerable amount of time to drawing up a feasible scheme for the wholesale prevention of cholera in a district and submitted my proposals to Government with the result that I was given permission by the then Lieutenant Governor, Sir John Hewett, to put my scheme to the proof in one district. The experiment was entirely successful. This district chosen was Kheri because it was the worst infected, and about 65 persons were dying daily. Mr. John Campbell, the District Magistrate, applied the provisions of the scheme with energy and enthusiasm, with the result that in four weeks the deaths from cholera in Kheri dropped to nil, and for the rest of the season, the district remained free except for a few sporadic cases. In the adjacent districts of Gonda and Fyzabad which were also badly infected and where no special measures were taken, the daily number of deaths in those four weeks had nearly doubled.

The result of this experiment was that Government sanctioned the scheme being applied to the 20 districts in these provinces in which cholera epidemics were annually prevalent. The scheme was fully instituted in the year 1914.

Our difficulties, however, were apparent from the very beginning. All District Magistrates were not so keen and energetic as Mr. Campbell, and the rules were not carried out with the strict attention to detail necessary. Slackness in reporting primary outbreaks often resulted in a large number of deaths and a wide-spread epidemic before the district authorities were even aware of the existence of the disease. The co-operation of the villagers was difficult to obtain, and the revenue and vaccination staff were not entirely free from the suspicion of taking small bribes to leave wells untreated, with the result that large numbers of preventible deaths occurred. The great war put an end to the cheap supply of Permanganate of Potash and my predecessor had to substitute Bleaching Powder. This is an unstable sterilizing agent which had to be distributed in sealed bottles. Theoretically, Bleaching Powder should retain its strength while thus sealed and distributed to the villages for use.

After the War, the cholera scheme was one of the first matters to which I devoted my close attention. I found that in many cases Government Orders on the prevention of cholera were being neglected, and one District Magistrate was even unaware of their existence. From many districts I received complaints that the Bleaching Powder was not effecting sterilization, that great difficulties were experienced in ensuring its proper distribution, that breakages of bottles were common, and that the villagers would not drink the water treated with this reagent.

I had careful tests made of the Bleaching Powder after storage in bottles for one or two months, and I found that the available chlorine had dropped on the average from about 30% to 10% and often to nil.

Bleaching Powder was, therefore, useless for the purpose for which it was intended and I obtained the sanction of Government to revert to the use of Permanganate of Potash in spite of the fact that its price had risen from about six annas a pound before the War to over Rs. 2 a pound.

The cholera districts were fully stocked in the winter of 1919-20 and the deaths from cholera were 6,952 as compared with the average of 88,000. In 1921, there was a disastrous outbreak of cholera, and owing to the great coal strike in England, the Permanganate which should have arrived in the spring was not received until August. The result was over 140,000 deaths for the year. On the receipt of the reagent and its distribution to the districts the epidemic was quickly brought under control.

In 1922, the districts were fully stocked with permanganate by March, and the Government issued the strictest orders to all concerned to adhere closely to the rules laid down for the prevention of cholera. Cholera broke out several times, but was effectively controlled by the district staffs and the result was only 2,330 deaths.

In 1923, up-to-date, six outbreaks of cholera have occurred and no epidemic has supervened, the deaths to date (28th Nov.) being only 2063 and the annual epidemic is over.

Now the cost of these anti-cholera measures to Government is Rs. 60,000 per annum plus the cost of the supervising staff, who control, direct operations, visit the infected villages to make sure that the wells are sterilized properly and none omitted, and carry on the work of educating the people by propaganda.

With the complete co-operation of the people, who thoroughly understand the value of the anti-cholera measures, no supervising staff at all would be necessary; each village could do all that is necessary itself. Ceaseless propaganda, however, is the only policy by which this object can be attained; and already, as the result of propaganda and example in the districts of Basti, Gorakhpur and Azamgarh, where district health staffs and Special Health Officers have been working, the villagers themselves are co-operating and beginning to understand that adherence to the rules in the cholera scheme does prevent the disease.

Now taking as before the revenue value of a human life as Rs. 9-12 the annual expenditure of Rs. 60,000 with the co-operation of the people would probably save the loss of 3/4ths of the people dying from cholera annually, viz. 66,000, representing a revenue value of

Rs. 6,43,500. As, however, the complete co-operation of the people cannot be obtained without precept and example, the cost of trained district health staffs must be added to the cost of prevention of disease, including the anti-cholera measures.

The cost for the 24 cholera districts of the United provinces at Rs. 15,000 per district would be Rs. 3,00,000 so that the total cost of adequate anti-cholera measures in the whole province would be about Rs. 3,60,000, until the people have learned their value.

10. *Plague.* The prevention of the plague is more difficult than cholera owing to the different mode of spread.

Constant propaganda during the last 20 years by peripatetic Medical Officers on special duty has had only modified results. Here and there, however, inoculation and evacuation are resorted to by the people. The great mass of the people, however, take little action to avoid infection. The District Health Staffs would, however, be of great value in preaching inoculation and evacuation in times of epidemies. The former preventative in a large epidemic would, if universally resorted to, be expensive, but evacuation costs little or nothing and I have no doubt that many lives would be saved by the teaching of the health officers. I estimate that at least half of the average annual number of deaths from plague would be avoided. As the average death rate of the last five years has been 72,000, therefore, 36,000 lives annually could be saved, representing a revenue value of Rs. 3,51,000 to Government.

11. I have now dealt with the three great epidemic diseases. With regard to the great endemic causes of death, viz: malaria and respiratory diseases, as stated in para 7 above, their early eradication would be difficult and expensive. We must, therefore, wait until the results of education and propaganda produce the desired effect.

Education and propaganda can, however, only be carried on by a trained staff, without which little advance can be made, so that the necessity for such a staff is just as great in the case of these diseases as in the case of the great epidemic diseases.

12. This brings us to the appalling infantile mortality. In the whole province the average infantile mortality, i. e., the number of children born who die during the first year of life, is very nearly 400,000 per annum or a quarter of the total births, a rate of 250 per mille.

Now a certain proportion of the infantile death rate is due to insanitary surroundings, unsuitable houses and overcrowding. These causes will only disappear gradually as the result of education and a higher standard of living. On the other hand the greatest proportion of the death rate is due to improper attention to the mother and the child at childbirth and during the first month of life, and the death rate due to these causes is just as high among the better classes of Indians as among the poorer classes, owing to the unhygienic social customs which are the general rule at confinements. Money spent, therefore, on trained midwives, health visitors and trained dais under the supervision of Medical Officers of Health in towns would undoubtedly reduce by half the existing death rate.

I have as yet very few figures at my disposal to quote from to support this contention, but the ones I have got show that the infantile death rate among children attended to by trained midwives and dais in Indian towns is about 100 per mille. In all municipal towns, therefore, midwives, health visitors and trained dais should be employed; and a tactful, but nevertheless intensive propaganda carried on with a view to breaking down the prejudices of the people and to creating a demand for the services of a better class of midwives than at present. The infantile mortality of the 85 municipal towns in the

United Provinces averages at present 40,000 death annually. The method I propose should reduce this number by half at least.

In the villages the problem would be more difficult, and at present we could only rely on the propaganda of the District Health Staffs, which are essential for the effective control of the epidemic diseases. Eventually qualified women doctors could be added to the District Health Staffs for this purpose, as they become available.

Now the population of the 85 towns in the United Provinces is in round figures 2,000,000 and the revenue from municipal taxation for these towns is Rs. 4-5 per head of the population, so that these towns are losing Rs. 4-5 in revenue, as half the number of children are dying under one year of age. This equals Rs. 86,250 per annum.

Taking the activities of the child welfare centre in Bareilly as an example I have calculated that an expenditure of Rs. 15,000 per annum would provide trained dais and supervision sufficient to attend to all the births in the city annually. These amount to about 4,000 and the Child Welfare Centre is actually now attending and supervising one quarter of these with an expenditure of Rs. 10,000 per annum, and could attend far more without extra expenditure. As the population of Bareilly is just under 120,000, an expenditure of two annas per head of the population per annum would ensure an organization capable of attending all the children born in these towns and supervising them during the first month of life. The cost for all the towns will, therefore, be Rs. 2,50,000 per annum.

As a business proposition, therefore, it would cost the municipalities three times as much to save these lives, as the men are worth to the town in revenue value. But it would only be necessary to spend this amount until such time as the people appreciated the services of trained dais after which this expenditure could be discontinued; and the fees which are now paid to untrained dais by patients, which I am told average Rs. 5 per case among the poorer classes, would be sufficient to support the trained dais.

13. Now with regard to the three epidemic diseases, the expenditure proposed above that now being spent on Public Health in the United Provinces in order to save more lives is put at Rs. 3,00,000. This sum is necessary to provide a properly trained agency to supervise and control the measures taken to prevent deaths from these epidemics and by propaganda and other educative measures gradually to raise the standard of knowledge among the people. The economic question is this. Can Government afford this amount, and is it a business proposition to spend the money? Using the same method of calculation for the whole province as before, we get the following results:—

Leaving small-pox out as the provisions for combatting it are approximately adequate and would be wholly adequate with the addition of the proposed supervising staff, the average annual preventible deaths from cholera amounts to 66,000 and from plague 36,000, a total of 102,000 preventible deaths. These at revenue value of Rs. 9-12 equals a loss of Government of Rs. 9,94,500 or Rs. 10,00,000 in round figures. Adding to this the saving to the provincial and imperial revenue accruing from the prevention of small-pox, viz: Rs. 16,38,000, the total revenue saving as the result of making adequate provision for the control of these three diseases alone is Rs. 26,38,000 in round figures, at an extra provincial expenditure of Rs. 3,00,000 in addition to the sum of Rs. 2,44,172 being already spent on vaccination. A total expenditure of Rs. 5,44,172 on these epidemics would add Rs. 26,38,000 to the revenues.

This is in addition to Rs. 2,85,000 nett, now spent on the precaution of epidemics or a total of Rs. 8,30,000 in round figures.

14. I therefore submit that *adequate* provision for the prevention of desease is a sound economic proposition. It will be noted that I have emphasised the word *adequate*, as money spent on inadequate provisions is money wasted. If a nation sends a small, ill-equipped, ill-trained army with inefficient leaders to repel the invasion of a large well-equipped and well-trained army, it will be inevitably defeated and the same principle applies to the prevention of disease. It may be argued that there is a considerable doubt that money spent in the ways suggested would actually save the calculated number of lives.

I can only reply that these methods are not new, they have been tried in the fire of experience in many countries and they have produced the results anticipated and even far better results. Is India different from other countries? Are measures which invariably succeed elsewhere going to fail in India? If that is the case, India's hopes of taking her place besides the other advanced nations of the world are doomed to disappointment.

15. In the above calculations, I have only taken into consideration the actual revenue loss caused by a death. I have not taken into consideration the enormous economic loss caused by sickness. In industrial countries this has been calculated at millions per annum. In India, I am afraid it is impossible to arrive at even approximate figures. It is generally admitted however, that the loss of income from sickness is very large, and it, therefore, causes a proportionate loss in local and imperial revenue. I have placed the minimum value on human life that could possibly be placed on it, and still have shown that expenditure on public health is not wasted, but represents money invested in the best class of life insurance policy which always insures a sound economic return.

CO-OPERATION AND THRIFT IN SOUTH INDIA

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The progress of the Co-operative Movement in the Presidency of Madras, judged by statistics, has been more satisfactory than the founders of the movement had dared to hope, in respect both of the number of societies and of the amount of working capital. This progress has been steadily maintained ever since the inception of the movement. To a large extent, this is to be traced to the earnest and well-conceived efforts of the officials who have been in charge of the Co-operative Department. It has been due also, and in recent years increasingly so, to the large number of unofficial workers who have given of their time and thought to the movement. The Madras Presidency has been specially fortunate in the quality of the unofficial workers who have offered themselves for co-operative service.

The figures with regard to the progress of the movement contained in the latest Annual Report of the Co-operative Department show an aggregate of 7178 societies giving an average of 64 members to a society. The total working capital of these societies amounted to over six crores with a paid up share capital of nearly eighty lakhs of rupees. This is certainly a hopeful record, considering the fact that the movement has hardly been twenty years in existence.

Although judged by figures the progress of co-operation in the presidency has been distinctly promising, there are many people interested in co-operation who entertain the apprehension that the record is not really so satisfactory as the figures would suggest. Two lines of criticism have been in evidence. In the first place, there are those who think that the progress could have been more rapid and extensive, in view of the large scope in an agricultural province for co-operative credit and the warm support which the movement has received both from Government and the people. If we consider the total membership of all the agricultural Societies now in existence, we shall find that it constitutes less than one per cent of the rural population of the presidency. Even assuming that the benefits of a co-operative society are not confined to those who are actually on the rolls, it will still be found that only a very small proportion of the population have come under the influence of co-operation. For example, if we take five as the average number in a family and assume that the benefits received by a member of a co-operative society are shared by the whole family, less than five per cent of the population in rural areas would be found to have come within the influence of the movement. If instead of taking the number of members as the basis of comparison, we take the number of villages which have been affected by the movement, we shall find that the villages in which rural credit societies are at work do not constitute more than seventeen per cent of the total number of villages in the presidency. It is contended, not without justification, that these figures point to the existence of an enormous field still left to be occupied by co-operative societies.

The second line of criticism looks at the co-operative movement from an entirely opposite point of view. The main point of the criticism is that although the figures show considerable progress, the progress has been, more or less, on the surface, and that judged by the increase in the actual welfare of the rural population, the movement cannot be regarded as having made any deep and lasting contribution. The fear most frequently expressed in this respect is that co-operative credit societies have done little more than provide additional facilities for borrowing for a population already inclined to borrow in excess of their real assets. In other words, if the real test of the co-operative movement is the increased productive power which it makes possible and not merely an increase in its loan funds, then it cannot be maintained with any certainty that the movement has justified itself. The subject is one of very great importance and requires more careful investigation than it has received hitherto.

There is one circumstance, which seems to indicate that this charge against the co-operative movement has some justification, and that is the relative scarcity of local deposits in rural societies. The scarcity of local deposits is put forward as a proof that there has been little increase in the productive capacity of the population, on the ground that if there had been increase people would have been able to save more and lay by more deposits. If we take the deposits in agricultural societies, (i. e., leaving out of account, deposits in central banks and urban societies), we find during the year 1921-22 a total deposit of less than fifteen lakhs of rupees out of an aggregate working capital of 223 lakhs. To understand the seriousness of the situation, it is necessary to remember that these fifteen lakhs of deposits are made up largely of deposits by local inhabitants of villages who are not actually members of societies.

It may be urged in answer to these figures that deposits do not offer any real indication as to the degree of productive capacity among the population. In the first place, it is likely that where savings have actually been made by a member of a co-operative society as a result of his membership in the society, he might invest his savings with a private individual instead of in the society. Private money-lending is still a lucrative occupation in rural areas, in view of the relatively low rate of interest paid on deposits by co-operative societies. So long as that is so, there is no reason to assume that savings made possible by co-operation will necessarily show themselves in co-operative deposits. In the second place, to judge the actual extent of savings by members of co-operative societies, not merely deposits but also paid up share capital must be taken into account, because paid up share capital partakes of the nature of long term deposits in the sense that it is largely made up of savings. The total paid up share capital in agricultural societies in Madras during 1921-22 is a little over 23 lakhs, which added to the total deposits would bring the aggregate savings invested in the movement to approximately 40 lakhs.

Even making allowance for these qualifying considerations, it still seems true that the thrift aspect of the movement has not received the attention it deserves, especially if we consider the extent to which the development of thrift has proceeded in the co-operative movement in European countries. One reason which is often alleged for the comparative neglect of thrift in our movement is the large place taken by the State in co-operative propaganda. The organisation of societies through State agencies has been regarded in most countries as a method of doubtful wisdom, because it is held to stimulate the artificial creation of societies in areas where people have shown little aptitude or desire for co-operative societies. The work of consolidation, that is, of placing existing societies on a stable basis and giving them a due sense of the need for self-relying effort, is work of a kind which a Government department cannot altogether be trusted to carry out effectively. This explanation of the neglect of thrift in the Indian movement has been so often urged that it is unnecessary to stress it.

But the most important reason why, as far as we can judge, any substantial and unmistakable advance in the cultivation of the thrift habit has not been possible is to be found not so much in state organisation and control as in the methods of finance on which the movement is based. Real productive capacity is not possible without a strengthening and improvement of the material assets of the rural population. What is required is a system of finance which will make it easier for the borrower to effect permanent improvements to the land which he holds. And permanent improvements to land are not possible without an adequate system of long term loans. The real trouble with the co-operative credit movement is that in the way in which it is financed, long term loans on an adequate scale are impossible to arrange. The central banks which practically finance agricultural societies receive deposits for short periods not exceeding two years. On this basis of short-term deposits it is impossible to build up a system of long term loans. That would be against banking experience and principles. It is true that loans for long periods are given even under the existing system. But such long-term loans are simply extension of short-term loans and the period for which they are granted seldom exceeds five years.

The most urgent problem, then, in co-operative credit is the organisation of a suitable system of long-term loans. Various schemes have been proposed towards the achievement of this object. In the Madras presidency for some years a scheme of co-operative debentures has been before Government, but it is still under consideration and has not yet come within the sphere of practical politics. Any scheme of debentures, to be successful, must imply the easy negotiability of the bonds issued under it. In regard to this, in a province like

Madras, two favouring conditions may be relied upon; first, the close association between the co-operative movement and the Government whose prestige, in spite of political restlessness in the country, is still so undeniably high, and secondly, the fact that the ultimate security on which agricultural credit rests is the security of the unlimited liability of the members. A proper appreciation of this latter fact will go a long way towards rendering bonds issued by a co-operative organisation acceptable to the general public.

Apart from these general considerations, there are two practical circumstances on which the success of any scheme of bonds based on the security of landed property must depend; first, an efficient system of registration of titles to land, and secondly, a speedy execution of judicial decrees and processes. The first undoubtedly exists in India and the second may be secured with a little stiffening up of the existing subordinate judiciary.

Co-operative debentures have so far been difficult to work out in India. But that does not seem to be due to inherent difficulties so much as to a defective appreciation of the really satisfactory character of the investment which they open out. What is required primarily is a steady and energetic propaganda in the direction of bringing home to likely investors the real character of co-operative debentures.

Closely connected with the question of thrift is the subject of co-operative sale and purchase. There is no doubt that one reason for the absence of savings in the co-operative movement is the fact that a considerable part of the debt incurred by an agriculturist arises not from direct money loans, but from the purchase of household necessaries and agricultural requisites, and the sale of agricultural produce, on unfair terms. The problem of indebtedness and the problem of purchase and sale are closely linked together. No solution of the problem of indebtedness will be effective which leaves the other problem alone. Where the agriculturist is compelled to buy the things he requires from, and sell the things he produces to, the very person who advances capital to him, no lasting remedy with regard to indebtedness is possible apart from a real reform in the methods of purchase and sale. Although the importance of non-credit work in co-operation has been generally recognised in the country, the close connection between credit and non-credit work does not seem to be fully realised.

The difficulties with regard to the organisation of co-operation for purposes other than credit have often been stated and it is unnecessary to repeat them here. The chief need is the employment in non-credit societies of the services of men with sufficient experience and skill in business. Sale and purchase are notoriously more difficult matters to arrange than loans; and further, in a province like Madras where in regard to most products of local origin the margin between retail and wholesale prices is so small, a very considerable degree of skill in the selection of commodities, the handling of customers, and the internal management of the business will be required. The ideas of gratuitous lay service which are so often associated with rural co-operation have to be modified considerably when it comes to the organisation of societies for purchase and sale.

DIMINISHING AND INCREASING RETURNS

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I.

INTRODUCTORY—THE GENERAL LAW OF DIMINISHING RETURNS

Intimately associated both with *real costs of production*, and *costs of production* and hence, with the theory of factoral distribution, is the phenomenon usually known as "diminishing returns" or "increasing cost of production." When man wants a larger amount of one commodity he is likely to find that additional units are harder to obtain than the first ones. Thus a little coal is easy to mine from an outcrop, but as more and more is needed we have to go deeper and deeper, and make use of poorer and poorer grades. If we try to double our crop on an acre of land, we are likely to have to put forth more than twice the effort. This general condition in nature requiring more than proportionate efforts to obtain larger quantities of a commodity is designated the *law of diminishing returns*. In this loose statement, however, the law is not applicable to our problem of costs and distribution; nor is it scientifically exact, as it involves several elements and is subject to a number of interpretations [1]. But before proceeding to discuss these in detail, we should note that this *general law of diminishing returns* has its counterpart in a *general law of increasing costs*. Larger necessary efforts to secure additional quantties of a commodity mean larger displaced opportunities, and hence, greater real costs of production, which are, generally speaking, reflected in greater money costs.

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[1] For a discussion of the numerous ways in which economists have used the term "diminishing returns", see Davenport, *Value and Distribution*, p. 480-511,

We should also note that there are occasional cases where larger quantities of a product can be had with a less than proportionate increase in efforts or displaced opportunities. These may be called cases of *increasing returns* and their corresponding correlative in costs *decreasing costs.* But then, too, *decreasing returns* need to be analyzed into their component parts.

II.

LAW OF OUTPUT RELATIVE TO INDIVIDUAL FACTORS OF PRODUCTION

First in importance among the several elements involved in the general law of diminishing returns is the phenomenon which we may best call the *law of output relative to individual factors of production.*[1] This law is perhaps most easily illustrated by reference to agriculture. Suppose A begins agriculture with half a bigha of land of a given quality, five men furnishing nine hours' labor daily at a given intensity, one motor tractor furnishing 400 hours of work during the season, and five machines capable of performing as many different operations. If A actually applies that amount of human labor and machine labor to his half bigha of land, there is little possibility of his having much of a crop. Now suppose he increases his area a hundredfold, making about 25 acres. Assuredly there would be much better chances of a crop, and most certainly a more than proportionate increase in the size. Or take the case of a manufacturer trying to operate a factory employing 100 men working on machines on 1/10th acre of ground. If he doubles his area of utilized land he would doubtless be able to produce more than twice as much—though of course he would rapidly approach the point where additional production becomes less instead of more than proportionate to the increased amount of land. These two cases show increasing volume of output, or of product, in proportion to additional units of one factor of production.

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[1] This, it will be apparent, is the phenomenon for which Pigou uses the term *law of diminishing returns to individual factors of production*, but denies that there is a corresponding law of increasing returns to individual factors of production (*Economics of Welfare*, p. 904). Carver likewise uses the terms *law of increasing returns* and *law of diminishing returns* with this meaning (see *The Distribution of Wealth*, ch. I). To this Marshall protested (*Principles of Economics*, 5th ed. p. 319-20, note) as depriving us of an old use of the term which is of great importance. But he failed to propose an alternative term for this new use. In Ely's *Outlines of Economics* the term *law of diminishing productivity* is suggested and used. In F. M. Taylor's *Principles of Economics*, (selection quoted in Marshall's *Readings in Industrial Society*, p. 290 ff.) the term *instrumental law of returns* is used, though the substitution of *output* for returns is suggested. The term *law of output relative to individual factors of production*, seems to me to be the best because (1) it avoids the confusion Marshall pointed out, (2) the word *output* is less ambiguous than either *returns* or *productivity* and (3) it conforms to the distinction which Pigou rightly draws between this and the parallel phenomenon in relation to resources in general. The presentation of the *law of output relative to individual factors of production* in the following pages is largely based, with modifications, upon that of Carver (*Distribution of Wealth*, ch. II) and Ely (*Outlines of Economics*, p. 388-405).

Next let us suppose that our hypothetical farmer, A, again increases his area a hundredfold, now cultivating 2,500 acres of land, and maintaining the same amount of human labor and machine labor, spreading it as evenly as possible over the whole amount of land. He would undoubtedly get less than 100 times the product. Suppose the manufacturer were to spread his factory over ten acres; he would undoubtedly get less product, to say nothing of ten times as much, as he would on one acre. These cases show decreasing volume of output in proportion to additional units of one factor of production.

It seems superfluous to add more illustrations of the same type, but the following two cases are presented to show the wide spread application of this principle and also one of the limitations to which it is subject in certain instances. Suppose that now our farmer A utilizes 25 acres and the specified labor and machinery. He varies, however, the amount of seed. As he increases the amount from 1/10 seer to the acre, say, of wheat or maize, he would probably get a product for a time proportionate to the seed—a case of constant volume of output in proportion to additional units of a factor of production. But after a certain point this would no longer be the case, and soon, in fact, he would reach a point where the use of more seed would mean positively less product. Or take the manufacturer's use of lubricating oil. If he uses only a tola's weight of oil per month on the hundred machines his product will be very little. To use several times that amount would more than proportionately increase the product. As the quantity increased beyond a certain point, however, the additional advantage of using more oil would decrease until it finally reached a point of positive disadvantage.

In the foregoing illustrations all factors of production except one are constant in quantity, and that one variable. In the following, one factor is constant and all others variable. Suppose A is using five acres of land. If he is growing a specific crop, such as sugarcane, a single day's labor of a man and pair of bullocks with the appropriate tools would be worthless because it would produce no crop at all. Five days might produce something of a crop, but a poor one. Ten days would certainly produce more than twice as large a crop as five, and twenty days' labor might produce more than twice as much as ten. But 40 days' labor would hardly produce twice as much as twenty, 80 would certainly not produce four times as much, and 200 days' labor would fall short of producing ten times as much. This five acres could then said to be subject to increasing rate of output up to the point where 20 days' labor was expended ; beyond that point it would be said to be subject to diminishing rate of output[1].

We may then state the *law of output relative to individual factors of production* in either of the two following ways : first, given all factors of production except one constant, the increase of that variable factor from an infinitesimal quantity to an infinite quantity will be attended at first with more than proportionate increase in the resulting product, but later with a less than proportionate increase; second, given one factor of production constant and all others variable, the increase in the variable factors from infinitesimal quantities to infinite quantities will be attended at first with more than proportionate increase in the resulting product, but later with a less than proportionate increase. In practice, of course, neither the infinitesimal quantities nor the infinite quantities of factors of production are of much interest to us. Our interest centers around the point where the use of additional units of the variable factor or factors begins to be accompanied by a less than proportionate increase in the product. This point is the *point of diminishing rate of output*. We may then state the most important part of the law of output relative to individual factors of production in the form of the *law of diminishing output* as follows: as a producer employs successive units of productive goods or services, each unit tends (after a certain point—the point of diminishing rate of output) to yield less to the total product than the unit last previously acquired.[1]

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[1] Cf. Carver, *Distribution of Wealth*, p. 56-7.

When the law of output or of diminishing output relative to individual factors of production is applied to all the factors simultaneously it becomes the *law of the proportion of factors*: given a group of factors of production each of a specified quality, there is a certain relative proportion among the quantities of each which will yield a larger product than any other proportion; or, as Davenport puts it,[2] disadvantage attends any excess or defect in the supply of productive factors relatively one to another. Increase in the amount of any which is already in excess or in plenty yields diminishing output; increase in amount of any factor which is in defect or shortage yields increasing output.

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[1] Cf. Ely, *Outlines of Economics*, p. 389.

This *law of the proportion of factors,* it must be borne in mind, refers to the physical product or output—quantity, weight and tale—and not to the value-product. To be sure the quantity of physical product influences profoundly the value-product; but the value-product does not depend upon this alone. It must furthermore be remembered that the term *individual factors of production* refers, in strict analysis, to each variety, each different kind of factor of production in disregard of any grouping such as we have made in a preceding article. When this law is applied to these groups, it must be assumed that each item of land, or labor or machinery, or what not, is identical in character and quality.

III.

LAW OF OUTPUT RELATIVE TO INDIVIDUAL FACTORS OF PRODUCTION IN RELATION TO THE VALUE-PRODUCT

We have now to examine the relation between the law of diminishing output relative to individual factors of production on the one side and the value-product and cost of production on the other. A modification of Carver's illustration is probably the best we can find for this purpose. The following table (A) shows, in an assumed case, how much corn can be produced on a ten-acre field with a fixed amount of seed by using different amounts of other factors of production, the amounts being expressed in terms of a weeks' labor of a man and pair of bullocks with the appropriate tools. This, it will be seen, is a case of two constant factors with all others variable.

The relation between the additional output or *additional physical product* resulting from the use of an increment in the variable factor or factors of production and the *additional value-product* resulting from the same increment will now be clear. The *additional value-product* depends on three things: (1) the additional physical product, (2) the price of the product, and (3)

TABLE A.

Weeks' labor of man with bullocks and tools.	Total crops in maunds.	Additional product due to use of last units.		Average product per week's work.	Additional value-product or maximum price offer for use of last unit.			
					(a)		(b)	
		Mds.		Mds.	Rs.		Rs.	
1/6	0	0	(m)	0	0		0	
1	25	25		25	65	195 255 285	0	125 183⅓ 212½
2	90	65		45	325 (x)		250 (x)	
3	165	75	(n)	55	375		300	
4	240	75		60	375		300	
5	275	35	(p)	55	175		140	
6	300	25		50	125 (k)		100 (k)	
7	315	15		45	75		60	
8	320	5		40	25		20	

(a) If wheat is worth Rs. 5 per maund and the land rent Rs. 5 and cost of seed Re. 1 per acre.

(b) If wheat is worth Rs. 4 per maund, and the land rent Rs. 9 and cost of seed Rs. 2 per acre.

(m) Stage of increasing rate of output.

(n) Stage of constant rate of output.

(p) Stage of diminishing rate of output.

(x) Assuming that the previously employed laborers could be obtained for the amounts next above, Rs. 65 in the one case and 0 in the other. But a maximum price offer for a second unit higher than that for the first violates our notion of competitive demand. It is the figures to the right of the brackets or maximum average price offer, which is significant whenever increasing productivity prevails. Thus in case (a) Rs. 185 could be offered for each of two weeks' labor or Rs. 255 for each of three weeks' or Rs. 285 for each of four weeks' labor of a man with bullocks and tools. Beyond this point diminishing rate of output prevails and the additional value-product and accordingly, the maximum price offer, becomes less for each additional unit.

(k) Margin of utilization if the market rate for a weeks' labor of man with bullocks and tools is Rs. 90 or 80.

the price which must be paid for co-operating factors of production. When enough units of the variable factor have been employed so that the total value-product is more than the price which must be paid for co-operating factors of production, this last ceases to have any influence and the additional value-product depends on the two things: additional physical product, and the price of the product. This condition is reached in case *a* in the table after the first unit of the variable factors, and in case *b* after the second unit. This *additional value-product* is the maximum price offer which can be made in payment for the unit of the variable factor.[1]

The margin of utilization of any factor of production depends, it is obvious, on two things: (1) the additional value-product resulting from the use of an increment of the variable factor, and (2) the price which must paid to obtain the use of the factor of production: that is, to withdraw it from some alternative use (or non-use). We may therefore state the *law of utilization of a factor of production* as follows: each factor of production tends to be utilized up to the point where the value added to the product by the last unit employed is equal to the cost of obtaining the use of the unit.[2] The last unit thus utilized—which just suffices to pay for itself—is the *marginal increment* of the factor of production, the added physical product attributable to it is the *marginal physical product*, and the added value product attributable to it the *marginal value-product*.[3]

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[1] Cf. Pigou, *Economics of Welfare*, p. 116. "Where there is no element present other than the direct physical addition made to output in the industry directly concerned, this money value is identical with the marginal increment of product multiplied by the price per unit at which the product is sold when the given volume of resources is being employed in producing it."

[2] Cf. Marshall, p. 521-39, and p. 406.

[3] See Appendix A, at close of this article.

IV.

THE LAW OF PROPORTIONS APPLIED TO GROUPS OF FACTORS OF PRODUCTION

The law of output relative to individual factors of production, or the law of proportion of factors, is applicable, as we have seen, to each individual factor of production; in any particular case different qualities of one factor being necessarily treated as different kinds, though perhaps similar kinds, of factors. Yet there is a sense in which the law of proportions may be said to apply to groups of factors of production. Not only may there be too many or too few oxen, or too many or too few ploughs, or too many or too few spades, or too much or too little seed in connection with a given area of land; there may be too much machinery and equipment in proportion to the land, or too much labor in proportion to the land and equipment. That is, since the individual factors of production may be arranged in any sort of groups, it is possible that one sort of factor of production may be in excess or shortage, with a resulting disadvantage in production.

The most important application of this law to groups of factors of production is in the ratio between population and productive resources. If half the population of India were to be swept away, leaving the supply of land and of other productive equipment unimpaired, there would undoubtedly be a much larger per capita product, and the standard of living would rise considerably. The per capita product in India (of economic goods) is only a small fraction of the per capita product in the United States, largely because the United States, with a third the population of India, has about one and two thirds times the area of productive land, several times as much mineral resources available for use, and most important of all, many times as much machinery and equipment—that is, because the

United States has the more favorable ratio between population and resources in general. This is the aspect of diminishing returns which interested Malthus and is of significance in the theory of population.

The second most important application of this law to groups of factors of production is familiarly known as the law of diminishing returns in reference to land. The application, in general, of more labor and production goods, to land, results, just as the application of more of the specific kinds of machines, seeds, etc., to a definite piece of land, in a less than proportionate increase in the output of product.[1]

Other applications of this law to groups of factors of production are numerous, for such applications to groups follow as a natural correlary to application to individual factors, whenever individual factors are classified into any sort of groups.

V.

SCARCITY AND DIFFERENTIAL QUALITIES OF RESOURCES

Another element relating to diminishing returns, entirely distinct from the preceding, but frequently confused therewith, is the fact that certain kinds of resources are limited in quantity, and the fact that existing resources vary widely in quality. If, for instance, an attempt were made to double the output of gold in India, it would take much more than double the present capital expenditure—not because more capital would be required in proportion to the gold-bearing ore in the present mines, i. e., not because of a change in the proportions of factors—but because the one factor, gold-bearing are, is scarce. If it were desired to increase the agricultural production of the United Provinces by 15%, and it were thought that (in view of the operation of the law of output in proportion to individual factors of production) this should be realized by adding 15% to the quantity of *each* factor of production in agriculture, difficulty would arise in finding 15% more land of the same quality (average) as that already in use (average). 15% more laborers might be found be drawing them away from the mills and cities or by increased population, though at a very high cost; 15% more animals could be provided by breeding, again at a certain cost; without great difficulty, 15% more equipment could be procured; 15% more seed would also be forthcoming, at little increased cost: but the land could be had only at great cost. It should be noted that there is no deficiency of land in abstract, for over 40% of the land in the United Provinces is uncultivated; nor in the possibility of creating sufficient good land, for a large part of this land could, by irrigation, by extensive fertilization and manuring be made equal in quality to the average land already in use; nor is the cost of withdrawal from an alternative use prohibitive, as might be the case with additional laborers. It is the differential quality of land, the scarcity of the better quality land, and the *great cost of making* good-quality land which is of vital importance. The *law of proportions* asserts that you cannot double your product by doubling the amount of some factors of production used in co-operation with constant amounts of other factors. The *principle of scarcity and differential quality* asserts that, in many lines of production, you cannot double your product by doubling all factors of production because there is sure to be one or more factors which cannot be doubled in quantity, at least while maintaining the same quality.

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[1] Cf. Marshall, *Principles of Economics*, 6th ed., p. 150.

Actually, the ability to add proportionately to all the factors varies greatly in different industries. Thus is would be easy to add 50% or 500% to all the factors of production engaged in pumping water out of the Jumna for the use of the inhabitants of the Allahabad city, and the increase in cost would probably be not more than 50% or 500%. It would not be difficult to add 10% to all the factors of production in the Indian cotton mill industry but to add 500% would probably reach the limit of some of the factors of production or necessitate the use of poorer qualities of certain factors. (To have to import raw cotton from a great distance is, within our meaning here, to have to use a poorer quality, for it has a place disadvantage). In general it is true that the extractive industries show this scarcity more seriously than manufacturing, precisely because they are closer to the fundamental resources which play a part in all economic production. This is one of the things behind the common distinction between agriculture and manufacturing in saying that the former is subject to diminishing returns while the latter is not.

This scarcity of best and better grades of resources has at least two separate, inter-related results in value and, accordingly, in cost of production. First, any attempt at expansion of product is accompanied by a cost larger proportionately than the enhanced quantity of product, because of the necessity of utilizing less efficient factors of production. Second, this increased demand for a scarce factor of production of a certain quality raises the price of all other similar, though not equal in quality, factors of production.

It is primarily this aspect of "increasing cost" or "diminishing returns" with which Ricardo was concerned in formulating his law of rent. It is one aspect, also, of Malthus' law of population for it was the scarcity of good land, as well as the lack of proportionate output resulting from applying additional units of labor and productive goods to land, which worried him.

The relation between the principle of scarcity and differential efficiency of resources and the extensive margin of utilization is similar to the relation between the law of output relative to individual factors of production and the intensive margin of utilization. Just as the margin of utilization of labor or of a particular kind of machine or equipment to be used with a given quantity of land depends upon (1) the cost of procuring the unit, that is, of withdrawing it from some other use, or from non-use, (2) the price which must be paid for co-operating factors of production and (3) the price of the product; so the extensive margin of utilization of any factor of production in a given industry depends on (1) the cost of withdrawal from some other use, or from non-use, (2) the price which must be paid for co-operating factors of production and (3) the price of the product. This is as true of land as of the "marginal laborer" in the sense of the laborer who is of such poor quality that he is just worth hiring at a very low wage.

Incidentally, the difference between land and other sorts of factors of production, in that the extensive margin of land is no-rent land, while the corresponding margin of labor, for instance, is not no-wages labor, is worth noting. It is merely that the price necessary to withdraw land from non-use is zero. With labor, as with many other factors of production, something is needed to withdraw the element from non-use. This quality of land, moreover, is not, as we are prone to thing, one of the qualities inherent because it is a "gift of nature" or nature-made. Machinery shows the same phenomenon. In many lines of manufacturing new inventions and improved machines produce differentials in quality, and older machines often become "marginal" machines in that they are just worth using with a zero payment therefor. Land shows this phenomenon more than any other sort of factor of production, because, " its quality varies, from piece to piece, with a variation which is immense in its range, but fairly continuous in its gradation." It is not the fact that it is a gift of nature, or made by nature, but the fact that *it is made as it is* that sets land apart in this respect from other factors of production.

VI.

CHANGE OF METHODS; INVENTIONS AND NEW PROCESSES

We have now discussed two of the major elements involved in what are generally termed the laws of diminishing and increasing returns; a third major element, that of the introduction of changed processes or methods, remains to be dealt with. We have seen that the law of proportion of factors is valid only when methods remain unchanged. If methods are changed, if an improved process is adopted, if more machines are used, the most effective proportion of the factors of production may be altered slightly or altered radically, depending upon the nature of the change. Sometimes new methods change an industry from one employing little fixed capital and much labor to one employing much machinery and little labor. Every economist has recognized that this element is an irregular thing—that while we can recognize its existence, we cannot formulate its effects into a law such as the law of proportions.

We can, however, divide the changes in method into two groups. One is that of truly new inventions, where a process or method not known before makes it possible to produce some commodity with less effort than formerly, or with less raw materials, or with a different and cheaper kind of raw materials, or by the substitution of machine labor for human labor, or of instruments of greater precision and dexterity for those of less precision and dexterity. It is easy to see that the resulting change in proportion of factors, and in the kind of factors of production as well, depends upon the nature of the new invention or new process or new method. The other group of changes is that of the adoption, because some previously used raw material or other factor of production is costly or difficult to obtain, or because of a change in the size of the manufacturing or productive unit, of methods already known and perhaps already in use in other plants manufacturing the same commodity. It is, of course, a *new* invention or *new* process which revolutionizes an industry occasionally; while the adoption of old, but changed methods may be merely the bringing of certain plants into line with others, or it may be an adjustment to changing economic conditions.

The effect, however, of these two sorts of change in methods upon diminishing and increasing returns is identical. The only principle which we can lay down concerning them—a principle which hardly deserves the name of a law, though it is more nearly such than some which at times have been so-called—is that a change of methods involves a change in the kind and quantities of the factors of production necessary in order to obtain either the same output as before or the maximum output possible with the new methods.

The importance of what are new methods has been recognized by economists generally. What has not been so generally recognized is that many of the "economies of organisation" involved in an increase in capital and labor relative to natural resources are essentially changed methods. When the farmer uses a tractor instead of human power or farm animals, when a business man installs a new accounting system necessitated by expanded business, when the manufacturer puts in a labor saving machine, or when he adopts a new system of routeing throughout his plant, or dismisses his peons in favor of a telephone system—in all of these the change is a change in the methods used in production. Moreover, as the scale of production or of business changes new methods are necessarily introduced. Not only does a larger scale of operations mean that changed methods would increase production; the larger scale of production usually makes some of the old methods impossible. The very physical expansion of plant necessitates certain alterations of method or process. But this leads us into the discussion of the problem of the size of the most efficient unit, which we must leave for the next section.

We should now examine the relation of a change of methods to value. Upon this little can be said except that each change has its own separate results. But any change which results in higher costs per unit would not be profitable and therefore not introduced. The effects of the law of output relative to individual factors of production may be either in the nature of diminishing or increasing output in proportion to effort expended, or when translated into terms of value, in proportion to costs, depending upon whether the changed proportions of factors are more or less advantageous than the former proportions. The effects of the principle of scarcity and differential qualities are in the nature of decreasing output in proportion to the quantities of factors of production used, or in terms of value, in proportion to costs. The effects of new processes or a change of methods may, theoretically, be in the nature of either increasing or decreasing output in proportion to the quantities of factors of production used, but practically, of course, the effects are mainly confined to the case of increasing output in proportion to factors of production, or in proportion to costs.

VII.

THE SIZE OF THE MOST EFFICIENT UNIT; IMPROVED ORGANISATION

Three distinct elements—(1) the proportion of factors of production, (2) the scarcity and differential quality of resources, (3) and the adoption of new methods—bearing upon the phenomena of diminishing and increasing returns have been discussed in the preceding sections. In this section we shall discuss certain other things which have a bearing upon these phenomena, but which we shall find can be analyzed into these three fundamental elements.

The first of these is the problem of the size of the most efficient unit, an idea which is one of the things involved in what is generally termed the law of increasing returns. If a firm is too small enlargement or combination with others may bring an increased output in proportion to resources employed, or to expenses involved in production. If, for instance, a shoemaking firm finds that to make in a year 5,000 pairs of shoes of a certain quality and size costs fifteen rupees per pair, while it could make 10,000 at a cost of ten rupees per pair, one would say that it was subject to decreasing costs and increasing returns. This might be true for the individual firm, and yet for the industry as a whole to double its output would most likely result not in a decreasing, but increasing, unit cost. The terms "increasing returns" and "diminishing returns" and "decreasing costs" and "increasing costs" are thus not only inexact in that they cover three distinct elements; they are also ambiguous in that they sometimes refer to increasing size of production units or business units (the problem of the size of the most efficient unit), and sometimes to an expansion of an entire industry, either by the addition of new production units or business units, or by the enlargement of those already in existence. The manufacturer's discussion of what he calls "increasing costs" and "decreasing costs" is mostly confined to the first of these meanings—to the problem of finding the most advantageous scale of production, i. e., the size of the most efficient manufacturing unit. Marshall's discussion of "increasing returns"[1] in his *Principles* is limited to the second meaning—to the phenomenon of increasing returns in connection with the expansion of an entire industry—his device of the "representative firm" being one way of excluding from discussion the problem of the most efficient size of production unit or of business unit. But "increasing returns" in this latter sense, and the "improved organisation" which Marshall regards as the essential feature therein, must await their turn for consideration. We must return to the use of "increasing returns" when it refers to the size of the production unit or business unit—to the problem of the most efficient unit.

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[1] Marshall, *Principles of Economics*, 6th ed., Book IV, ch. XIII and Appendix H.

Agriculture and manufacturing have sometimes been said to differ in the matter of returns, agriculture being subject to diminishing returns and manufacturing subject to increasing returns. It is quite generally recognized, however, that this difference is not due to any inapplicability to either manufacturing or agriculture of any of the three elements—the proportion of factors, the scarcity and differential quality of resources, and the adoption of new methods. Yet there are certain facts behind the distinction. One, we have already noted, is that the effects of the principle of scarcity and differential quality of resources show themselves more plainly in agriculture than in manufacturing. But there is a more important difference than that—and this is in the size of the most efficient unit of production. The great quantities of soil, of water, and of sunlight necessary in agriculture do not permit geographical concentration of the productive process. A thousand workers cannot be used to the best advantage, under the law of proportions, within an acre or a few acres area, as in manufacturing; neither is it practicable to increase the working area in a small geographical unit by placing one process above another, as is done in manufacturing. This technical difference —the wide difference in the kinds and the quantities and sources of the required factors of production—carries with it important differences in economic method and organisation.

The first in importance of these differences is the fact that management, or supervision, is, comparatively speaking, more difficult. To supervise a hundred workers, or the production of a lakh's worth of output, is a much greater task in agriculture than in manufacturing. Applying the law of output relative to individual factors of production with management as the constant factor, we find the point of diminishing rate of output and the margin of ultilization of the varying factors quickly reached.

Another difference affecting management lies in the fact that the agriculturalist has not found it possible to control rigidly the uniformity of quality and the quantities utilized of his raw materials. That is, he has not been able to standardize the quality of the soil, or to control exactly the quantity of sunlight and water and heat he uses, as steel manufacturers standardize their raw material by reducing their ore to pig iron and control the temperature of their furnaces. This inability to standardize and to control quantities makes necessary frequent decisions concerning the guidance of the work. The manufacturer is enabled to give standing orders and exact specifications to his employees, and to assign jobs in which one day's job is the same as that of the previous day and the following day. Not so in agriculture ; and management is, in this respect also, relatively more difficult in agriculture than in manufacturing. As Robertson says, "It is the economies of large-scale government and not of large-scale technique which dictate the size of the business unit;"[1]

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[1] Robertson, *The Control of Industry*, p. 25.

and in the case of agriculture large-scale government is not, generally speaking, economical.

Still a further difference between agriculture and manufacturing lies in the sort of methods which can be used. Certain raw materials of agriculture, such as soil, water and sunlight, occur widely distributed and are not readily transported. In manufacturing the raw materials are brought to the source of power. In agriculture this is impracticable, and the power has to be brought to the location of the raw materials. Again, modern machinery requires, in most cases, at least whenever used in large units, a solid foundation. In manufacturing this is accomplished by stationery machinery; in transportation by a specially constructed road-bed. But one cannot use a machine to cultivate the soil and have a solid foundation therefor. These two facts, (1) that the power has to be brought to the location of widely scattered raw materials and (2) that there can be no solid foundation for machinery, have made it necessary for agriculture to use smaller and less efficient units of power than manufacturing. Changes in the unit of power have been among the most important of the new manufacturing methods of the past century. Many of the economies of large-scale production are connected with the use of large and concentrated power units. Since it is mainly the adoption of new methods which has altered the size of the most efficient manufacturing unit, it is clear that the use of smaller and less efficient units of power in agriculture removes from that industry one of the greatest incentives to large-scale production.

These facts regarding agriculture will serve to show, not only one of the differences between agriculture and manufacturing, but also that "increasing returns", in sofar as they relate to the problem of the size of the most efficient business units, are a compound which analyzes into (1) the law of output relative to individual factors of production, or the law of proportions, and (2) the change in processes and methods accompanying the change in the size of unit[1].

The second thing which has a bearing upon the phenomena of diminishing and increasing returns and which is a compound needing analysis is the "improved organisation" accompanying the application of more capital and labor to an industry[2]. This, though closely allied to the problem of large scale production in the individual manufacturing plant or business unit, is different therefrom in that it has reference to an industry as a whole. It might be called the problem of the most efficient size of an industry. But even with this distinction it is hard to separate the large-scale unit of production from the large-scale industry. For, as Marshall says: "An increase in the aggregate volume of production of anything will generally increase the size, and therefore the internal economics possessed by such a firm; it will always increase the external economics to which the firm has access; and thus will enable it to manufacture at a less proportionate cost of labor and sacrifice than before."[1]

Moreover, it is not necessary for our present purposes to distinguish exactly between the economics having to do with large-scale unit of production and those having to do with the large-scale industry. For the latter, like the former, fall upon analysis (1) partly into the law of output relative to individual factors of production, and (2) partly into the change in processes and methods accompanying the change in the size of the industry. For unless the larger scale of operations results in (1) a more advantageous use of resources, i. e., there is a change in proportion among some of the factors of production, such as less space in proportion to the machines, or less labor of certain kinds in proportion to the amount of raw materials, or less supervision in proportion to the number of workers employed, or (2) allows more efficient methods to be used, such as the introduction of an expensive machine, or of machines instead of labor, or the use of by-products, its "improved organisation" is not much of an improvement.

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[1] See Appendix B for discussion of the practical side of the problem of the most efficient production unit or business unit.

[2] "The *law of increasing return* may be worded thus :—an increase in capital and labor leads generally to an improved organisation, which increases the efficiency of the work of capital and labor." Marshall, *Principles of Economics*, 6th. ed., p. 318.

[1] *Ibid.*, p. 318.

VIII.

INCREASING AND DIMINISHING RETURNS IN RELATION TO RESOURCES IN GENERAL

There are thus three distinct forces having an influence on the proportions between increased quantities of factors of production and the change in output brought about thereby.[1] In trying to find whether there is increasing or diminishing output relative to resources in general we must, therefore, estimate the composite effect of these three forces. Part of the forces may be operating in one direction and part in the other. In fact it is nearly always thus; and the problem of finding whether any given plant or industry is subject to increasing or decreasing or constant output in proportion to resources in general is a difficult one. What is perhaps the greatest difficulty is that of finding a common measure of the different sorts of resources so as to determine a percentage increase in "resources in general." What we desire, of course, is some sort of measure which will represent the degree of displaced opportunities, to use the term we found appropriate in a preceding article,[2] or of effort and sacrifice, to use the terms made familiar by Marshall and his predecessors. The only common measure that seems to answer the purpose with any degree of satisfaction is that adopted implicitly by Pigou, namely, a unit of unspecialized purchasing power, to be expended on factors of production in the most advantageous way, that is, such that the increase in product is the greatest possible that may be obtained with the expenditure of this unit.[1] Then if the ratio between the increment of product resulting therefrom and the total product obtained previously is larger than the ratio between the unit increase in value of resources and the value of the resources previously employed, there is diminishing rate of output. If this ratio is less, there is increasing rate of output; while an equality of ratios would denote a constant rate of output.

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[1] One wonders if these are what Pigou calls "little cases" within the that boxes in his article in the Economic Journal of December 1922, p. 463. But since he does not take the effort to label any of the cases, we can make no assumptions that these are what he means.

[2] *The Theory of Distribution*, in the Indian Journal of Economics for October 1922.

Two comments upon this conception of rate of output in proportion to resources seem to be needed. The first is that this rate of output has a more direct relation to economic value than it has to industrial technique, while if the resources in general were measured in terms of physical quantities the reverse would be the case. To illustrate: suppose a firm (or industry) desires to expand its output by 10% and does so by increasing all factors of production proportionately, and with no change of methods. But one raw material is scarce, and there are no poorer qualities which can be used. To demand 10% more of this raw material means an increased price. With a quantitative measure of the physical resources employed the increase is exactly 10%, and the rate of output in proportion to resources so measured a constant rate of output. But in proportion to resources measured in terms of value there is a decreasing rate of output. The principle involved herein is of immense importance to industry and to economic welfare—for even the most advantageous methods, the most efficient means of production, considered from the point of view of human effort directly applied may be uneconomical, simply because of the scarcity of resources. But even here, if one considers the human effort necessary to obtain the raw materials, there may in the long run work out some sort of equivalence between the value of increments to resources and the amount of human effort.

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[1] Pigou says: "Diminishing returns (to resources in general in a given occupation) rule when the increment of product to the increase by a unit in quantity of resources occupied in producing some commodity is smaller, the greater is the quantity of resources so employed." (*Economics of Welfare*, p. 120). What he means by a "unit in the quantity of resources" can only be assumed, since he does not attempt an explanation. For further discussion see Appendix C, at close of this article. Marshall, it will be recalled, felt that to use a money measure in this connection is a dangerous proceeding (*Principles of Economics*, p. 319-20).

The second comment needed here is that the manufacture or production of any given commodity may at the same time be subject to both diminishing and increasing rate of output in proportion to resources in general. If the railway industry that is operating on single-track lines and is well equipped as such adds a unit of resources smaller than sufficient to double-track important sections, the result will undoubtedly be a diminishing rate of output; if the unit is sufficient for double-tracking and accompanying increases in equipment, it will undoubtedly be accompanied by an increasing rate of output. Whether there is a decreasing or an increasing rate of output depends upon the size of the unit increase in the value of the resources employed. This is a phenomenon well know to manufacturers who have made studies of "increasing costs" and "decreasing costs." For the conception of increasing and decreasing rate of output is identical with the manufacturer's conception of increasing and decreasing costs.

In using a unit of unspecialized purchasing power as our unit of resources in general we have partially made the transition from physical quantities to value. To make the transition complete we must use value units instead of physical quantity units in estimating the increased product. Upon this we need say only what has so often been said—(1) that if we are discussing the rate of output or costs in reference to a single plant or a single firm out of a large number engaged in the same industry the value of the product varies directly and proportionately with its physical quantity; (2) but that if we are discussing the rate of output or costs in reference to an entire industry or to a monopoly the value of the product varies with the physical quantity in accordance with the demand schedule for the commodity, rather than directly and proportionately. Furthermore, the ratio between output measured in terms of value and resources in general in terms of value is nothing more nor less than the rate of profit or rate of return on capital investment.

IX.

SUMMARY

1. The general condition in nature requiring more than proportionate efforts to obtain larger quantities of a commodity may be called the general law of diminishing returns ; cases where larger quantities of product can be had with a less than proportionate increase in effort or displaced opportunites may be called cases of increasing returns. Correlative with these are "increasing costs" and "decreasing costs". These terms, however, are inexact and need precise delimitation and analysis before they can be used in studying the economic problems of costs and of distribution.

2. The phenomena included under the general laws of increasing and decreasing returns are three: (1) the

law of output relative to individual factors of production, or the law of proportion of factors; (2) the principle of scarcity and of differential qualities of resources; and (3) change of methods. "The size of the most efficient unit" and "improved organisation", both frequently involved in discussions of diminishing and increasing returns, are complex elements, compounds of these three fundamental elements.

3. When the law of output relative to individual factors of production, or the law of proportion of factors, is applied to groups of factors of production, we obtain as one particular case of great importance, the law of diminishing returns in reference to land, and touch the problem of the relation between population, productive resources and the standard of living. The principle of scarcity and of differential qualities of resources is at the back of the phenomena of rent and of differences in rent.

4. The effects of the law of output relative to individual factors of production may be either in the nature of diminishing or increasing output in proportion to effort expended, or when translated into terms of value, in proportion to costs, depending upon whether the changed proportions of factors are more or less advantageous than the former proportions. The effects of the principle of scarcity and differential qualities of resources are in the nature of decreasing output in proportion to the quantities of factors of production used, or in terms of value, in proportion to costs. The effects of new processes or a change of methods may, theoretically, be in the nature of either increasing or decreasing output in proportion to the quantities of factors of production used, but practically, the effects are confined to the case of increasing output in proportion to factors of production, or in proportion to costs.

5. When the net effect of all these forces is considered, the problem is that of the rate of output relative to resources in general. There are at least three cases of this problem. (1) The first case is when both the output and the resources are measured by physical quantities. But we have no satifactory way of measuring physical quantities of resources in general. (2) The second case is when output is measured by physical quantities, and resources in general by value, or units of unspecialized purchasing power. When thus measured, increasing or decreasing or constant output relative to resources in general becomes the same as "increasing costs" and decreasing costs". (3) The third case is when both output and resources in general are measured in terms of value or of the media of exchange. Increasing or decreasing value-output relative to resources in general, as we might label this case, is essentially the same as an increasing or decreasing rate of profit on capital investment.

In conclusion, it seems desirable here to call attention to the inaccuracy and the confusion resulting from the use of the term "law" in this connection. Suppose several bodies are acted upon by three forces, pulling in different directions. As a result, some of the bodies move in an easterly direction and some in a westerly direction. The physicists would never think of saying that some were subject to the *law of moving east* and some to the *law of moving west.* So with the rate of output (or "returns") relative to resources in general. We say rightly that any given plant or industry, at a particular time, shows (or perhaps we might say, is subject to) decreasing returns or increasing returns, but we ought never to say that the plant or industry is subject to the *law* of increasing or decreasing returns.

Appendix A. "Marginal" Terminology.

In view of the widespread use of the terms "marginal productivity" and "marginal product" for two distinct meanings and sometimes for other meanings, and the existence of several other terms for these and allied meanings, the following synopsis of usage by leading writers is given here. Let us first separate the various ideas, and label them concept "*a*", concept "*b*", etc.

Concept "*a*"—an additional unit or increment in the employment of a factor or factors of production—illustrated by column I in table A (page 154).

Concept "*b*"—as illustrated by column III in table A—the additional physical product due to the last unit, or an increment, of a factor of production.

Concept "*c*"—the value of this additional physical product—as illustrated by column V.

Concept "*d*"—margin of utilization.

Concept "*e*"—the last unit really utilized—that just pays for itself—called above the *marginal increment of the factor of production.*

Concept "*f*"—the physical product attributable to a unit on the margin of utilization, that is, a concept "*d*" unit, one that just pays for itself.

Concept "*g*"—the value of the product attributable to a unit on the margin of utilization, one that just pays for itself. It is obvious that this value coincides with the cost of obtaining the unit, or its remuneration.

Concept "*h*"—the cost of obtaining this unit which just pays for itself—concept "*g*" from the other point of view.

Concept "*i*"—The foregoing are all related to the law of diminishing productivity, and all assume uniformity in the units of the factor or factors of production concerned. Concept "*i*" refers to difference in quality of units. Thus a dairyman may speak of "marginal cows"—meaning that of a number of cows with, presumably, the same cost of maintenance certain ones are only just worth keeping. Chapman calls attention to the danger of confusing this concept of a "marginal thing" with the "marginal use of a thing" (concept "*a*"), (*Outlines of Political Economy*, p. 38-9).

Concept "*j*"—Along with concept "*i*" referring to marginal quality, goes the idea of the remuneration of the factor which is of such poor quality it is just worth while to use it. Marginal land in the concept "*i*" sense is generally regarded as no-rent land, *i.e.*, the remuneration is zero. But not so with labor. "Marginal workmen earn something." (Seagar, *Economics—Briefer Course*, p. 165).

Of these it is concepts "*a*", "*c*," "*e*" and "*g*" concerning which economists are most divergent in their use of terms, as the following table of usage will show. References are to the following books:

Marshall, *Principles of Economics*, 6th. ed.; Pigou, *Economics of Welfare;* Wicksteed, *Commonsense of Political Economy;* Gide, *Principles of Political Economy;* Ely, *Outlines of Economics*, 3rd ed.; Carver, *The Distribution of Wealth;* Clark, *The Distribution of Wealth;* Flux, *Economic Principles;* Henderson, *Supply and Demand;* Chapman, *Outlines of Political Economy;* Seligman, *Principles of Economics;* Pensen, *The Economics of Everyday Life*, Vol. I; Seagar, *Economics—Briefer Course.*

Concept "*a*"

Last or additional unit—Gide, p. 51-2.

Dose (of labor and capital) }Marshall, p. 153-55.
Equal successive doses

Increment—Ely p. 392.

Slight increment }Wicksteed, p. 40-41.
Marginal increment

Additional increments—Gide, p, 512, note.

Marginal increment—Pigou, p. 115.

Concept "*b*"

Marginal product, Carver, p. 82-3, 90, 159, 190.

Concept "*c*"

Net product—Marshall, p. 521, 406, 667.

> "Net-product (*i.e.*, net addition to the value of his total product)—net, that is after deducting for any extra expenses that may be indirectly caused by the change, and adding any incidental savings," p. 406,

Additional net product—Marshall, p. 515.

Product due to last man (special case of shepherds)—Marshall, p. 519.

Marginal significance
Marginal value } Wicksteed, p. 40-41, 362.
Marginal effectiveness

Additional value—Gide, p. 511.

Additional product—Clark, p. 188.

Marginal productivity
Marginal net product }—Flux, p. 120-1.
Net product of the marginal man

Marginal net product—Pigou p. 114 ff.

Concept "*d*"

Margin of utilization—Accepted usage.

Margin of profitableness—Marshall, p. 356, 432, 521.

Margin of production—Marshall, p. 373; Henderson, p. 52.

Special cases of the same concept:

Margin of cultivation—in general use; Marshall, p. 154.

Margin of building—Marshall, p. 447.

Concept "*e*"

Marginal dose—Marshall, p. 154 (in reference to labor and capital).

Marginal use of an agent or thing—Marshall, p. 522, 410, 431; Chapman p. 38-9.

Marginal increment (of capital)—Ely, p. 393; Seligman, p. 266.

Final increment—Clark, p. 248.

Final, marginal or last unit—Clark, p. 180.

Then there are the various modifications of this when the unit or increment conforms to reality; *e.g.*

Marginal laborer—in common use; Gide, p. 52.

Marginal mines—Henderson, p. 55.

Concept "*f*"

Marginal return—Marshall, p. 154.

Marginal output—Flux, p. 313.

Concept "*g*"

Marginal net product—Marshall, p. 407.

Marginal efficiency—Marshall, p. 522; Seligman, p. 266.

Net product at the margin of production—Marshall, p. 410.

Marginal product—Marshall, p. 518; Ely, p. 392 3; Flux, p. 313.

Final product—Clark, p. 255, margin.

Marginal productivity—Pensen, p. 157.

Concept "*h*"

Marginal cost of production—Henderson. p. 59, 65.

Marginal costs—Marshall, p. 402, (heading ch. VIII-IX); Seligman, p. 192, 200-1.

Concept "*i*"

Marginal thing—Chapman, p. 38-9.

Particular cases:

Marginal land—common use.

Marginal firm or *concern*—common use.

Marginal laborer—common use.

Concept "*j*"

Marginal rate of wages—Seagar, p. 165, 194.

A review of these uses shows that there is complete agreement on one use only—that of the concept of the margin of utilization. That this lies at the point where the value added to the product by increasing the amount of the factor just equals the cost of utilizing the additional amount of the factor is acknowledged by all. Elsewhere there is agreement regarding the facts; but wide differences in terminology, This divergence in terminology is mainly around the meaning that should be attached to the adjective "marginal." Wicksteed, Pigou, and Clark, among others, use it in referring to concepts "*a*" and "*c*"—that is, any added "dose" or increment to the factor of production, and to the value of the additional product brought forth by such increment. This is an accordance with columns III and V of the table on page 154. Marshall, however, carefully avoids using the term "marginal" in this connection, using instead ***net product*** or ***additional net product*** in its place. He reserves the term "marginal" for the ***dose*** and the ***return*** and the ***product*** actually on the ***margin of utilization*** or the point of equilibrium between ***additional product*** and ***additional cost.***

From the point of view of the best use of English there is much to be said in favor of both terms. The "margin" of a river might be construed to mean either the precise edge at any particular time, or it might mean the whole bank (in the case of the Jumna or Ganges a mile, perhaps, in extent; in the case of steep sloping sides we might speak of "marginal" as anything which referred to the entire slope, even though the water's edge never reached the upper parts).

I have preferred to follow Marshall's usage (1) because it is easier to find other terms (additional increment, additional product, etc.) for concepts "*a*" and "*b*" than it is for concepts "*e*" and "*f*"; (2) because it is more symmetrical in reference to accepted usage in regard to *quality* margins (concept "*i*": no one thinks of using the term "marginal land", when speaking of differentials of quality, to mean a unit of the next grade—but only of the grade which it is just worth using); (3) because it is more in accord with common business usage; and (4) because it seems to me to be less confusing to elementary students.

The third general use of the term "marginal" is in reference to differentials of quality (concepts "*i*" and "*j*"), Upon this use there seems to be general agreement, though sometimes there is failure clearly to distinguish between this "marginal thing," as Chapman says, and the "marginal use of a thing". This use of the term "marginal" can well be used alongside of its use in concept *e*" and "*f*". Thus there are two sorts of margins of utilization (corresponding to the accepted "intensive" and "extensive" margins of cultivation)—one a "quality" margin, the other a "quantity" margin, but in either case *marginal unit* is the unit which under the circumstances is just worth utilizing.

Appendix B. The Size of the Most Efficient Production and Business Units

The problem which confronts every manufacturer is a very practical one. On what scale shall he produce? On what scale shall he conduct business operations and control his sales? Will a larger scale of operations yield him a larger or a smaller proportionate profit? Obviously, he thinks in terms of value, and increasing and decreasing costs are conceptions which he has to use, and to work out into actual figures if he is to make his maximum profit. However futile it may seem to some economists to try to determine whether an industry is subject to increasing or to decreasing returns at any particular time (see Clapham's article on "Empty Hat Boxes" in the September 1922 issue of the *Economic Journal* and Pigou's reply and Clapham's counter reply in the December 1922 issue of the same journal), it is imperative to the industrial manufacturer and business man and financier that he calculate and carefully consider increasing and decreasing costs in his plant and in his business units. Upon what basis does he decide the scale of production? Can any generalizations be made in regard to this based upon the experience of hundreds and thousands of entrepreneurs who have faced and solved or failed to solve the problem?

We should first note that there is a vast difference between the production unit and the business unit, or between the production unit and the sales or distributive unit. Many manufacturing companies have a single business unit, i. e., the control of the company is unified, but many production units, i. e., many separate manufacturing plants exactly or essentially like each other. Some of the recent economic movements like marketing co-operative societies in agriculture are based on the principle that a small size production unit is the best in agriculture, but that a large-size all-inclusive sales unit is the best. Our first generalization, then, is this: that the size of the most efficient unit varies with the phase of the productive process, or with the part of our economic organisation, concerned. In particular, the most efficient size of marketing unit is, generally speaking, larger than the most efficient size of manufacturing unit.

The second generalization that we can make is that the chief factor in the varying size of the most efficient production unit is the proportion between the amount of hand labor and the amount of machine labor required, with the methods in use, to produce the commodity. The larger the proportion of hand labor, the smaller the production unit; the larger the proportion of machine labor, the larger the size of the most efficient production unit. This principle has been called the "law of balanced return" by Dewing, who has probably devoted more attention than any other economist to the practical problem of the equilibrium point between increasing costs and decreasing costs. ("The ratio between the quantitative value of labor and fixed capital in any unit of product determines the point at which increase in the scale of total production ceases to be economical; i. e., it determines the point of maximum productivity beyond which further investments of fixed capital and further increments of labor cease to yield the same proportionate quantity of product." Dewing, *The Financial Policy of Corporations,* Vol. IV, p. 24.) One needs only to glance at the facts of the industrial world to see the truth of this law. The handicraft trades which are able to compete with machine methods and hold their own are those involving fine workmanship. The making of steel, the manufacturing of products made of steel, and the utilization of petroleum are the most completely machinized of all our industries, and these are the ones where large-scale production has been most prominent. Steel companies, motor-car companies and oil companies—these have been and still are the most famous among the giant concerns.

Appendix C. "A Unit in the Quantity of Resources."

"Diminishing returns (to resources in general in a given occupation) rule when the increment of product to the increase by a unit in the quantity of resources occupied in producing some commodity is smaller, the greater is the quantity of resources so employed." (Pigou, *Economics of Welfare*, p. 120). What does Pigou mean by a "unit in the quantity of resources?" Which of the following conceptions?

1. Would an "increase by a unit in the quantity of resources" be brought about by an increase in the quantity (physical, not value) of one particular kind of resource, that is, of one of the factors of production? Certainly there is nothing involved in this but the general principle of proportionality—an increase in one factor leading to a better or a worse proportion among the co-operating factors, and therefore to what is increasing or diminishing rate of output in proportion to total resources employed. But this conception is no different from what Pigou has called the law of diminishing returns relative to individual factors of production and I have called the law of diminishing output relative to individual factors of production, and its real (though by Pigou unrecognized) correlary of increasing output relative to individual factors of production. Hence, this can hardly be Pigou's meaning.

2. Would Pigou consider "an increase by a unit in the quantity of resources" to mean an increase by a unit in all the kinds of resources employed except direct personal effort? That is, an increase of all non-human factors of production, or in other words, a change in the proportion between resources (both nature-made and man-made) and labor (all qualities, both physical and mental)? If so, is there anything involved but the principle of proportions? This is merely an application to labor (following the terminology which speaks of diminishing returns applied to land when land is the constant factor and the others variable) of the law of output relative to individual factors of production. This can hardly be Pigou's meaning. Moreover, his note on page 933 seems to indicate that he includes labor in "resources" throughout this discussion.

3. Or would there be "an increase by a unit in the quantity of resources" when there is an increase by an unit in all kinds of resources, including labor? Here the proportions among the factors of production remain the same. But unless there is a change of methods (which would carry with it a change in the proportions of factors which is the most efficient), there is no reason for supposing any variation in product except in proportion to variations in resources. It therefore seems impossible that this is Pigou's meaning.

4. Or does Pigou's law of diminishing returns to resources in general invested in a given occupation refer to the fact that resources of a given kind are limited, and that consequently a different quality of resources (in reference to the product desired) has to be utilized in order to have an enlarged output? That is, is the law simply a fact-disguising way of saying that units commonly employed in measuring factors of production (e. g. acres of land) are not homogeneous, and that since they are not homogeneous, we cannot expect products resulting therefrom to be homogeneous, or if homogeneous, equivalent in quantity? Thus agricultural land, because it is such a complex thing, comprising elements of chemical composition, moisture content and its distribution, its subjection to heat and light and other climatic influences, is commonly measured in acres, differing widely in quality. Suppose the wheat growing industry, or occupation, for instance, is using at present all the land of quality x, in amount 5000 acres. Now 100 acres of land of quality y, differing from x in that it receives less moisture, are added to the wheat growing area, together with an addition of 1/50th part of the former amount of labor and capital (all non-land factors)—has or has not the total resources devoted to wheat-growing been increased by 1/50th? If I have 50 potatoes of 8 oz. weight each and I find another of equal volume but weighing only 7 oz. due to a 1 oz. less water content, have I or have I not added 1/50th to my stock of potatoes? Apparently, one can answer only from my point of view. If I want to sell them by weight I have not added 1/50th; if I want to extract the starch from them, I have added 1/50th. Analogously, if we want to raise wheat on this hundred acres, we have not added 1/50th, but something less, to the resources invested in wheat-growing. (The absurdity of the contrary answer is evident when an example of extreme difference is taken. Suppose, instead of land y, the next available land is a granite rock without soil. Would a hundred acres be any addition at all, to say nothing of 1/50th addition, to the wheat-growing resources?) Can we, then, talk about percentage

increases in resources unless those resources can all be reduced to some common unit of measurement, and what common unit of measurement can there be except that of added power to produce the thing one is after; and if this is the unit, where is the possibility of diminishing rate of output on the basis of the differential qualities of resources?

5. Or does Pigou mean by "increase by a unit in the quantity, of resources" a unit of unspecialized purchasing power, assuming no changes in the measuring-rod of money, to be expended on factors of production in the most advantageous way, that is, such that the increase in product is the greatest possible that may be obtained with the expenditure of this unit? Then, as noted in the preceding discussion, if the ratio between the increment of product resulting therefrom and the total product obtained previously is more than the ratio between the unit-increase in value of resources and the value of the resources previously employed there is increasing returns (rate of output) relative to resources in general. If this ratio is less, there is diminishing returns (rate of output). This does. indeed, seem to come closer to Pigou's meaning than any of the other interpretations. It is a concept of considerable importance and significance in economic theory, especially in its application to the problem of transfer of resources from one industry to another—one of the major uses which Pigou makes of the "laws of increasing and decreasing returns." It fits well with Pigou's definition of "direct physical net product"—in which he allows for the effects of the law of proportionality in the phrase "when appropriately organized." It is consistent, so far as I have been able to discover, with his use of the terms "increasing returns" and "decreasing returns" throughout the *Economics of Welfare*. But in the absence of elucidation, for nowhere does Pigou explain what he means by an increase by a unit in the quantity of resources, we can only say that he has adopted this meaning by implication.

KAUTILYA CIRCLE

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INTRODUCTION

Economic Surveys of villages and districts have been carried on in other parts of India, notably for a District in Bengal by J. C. Jack, I. C. S.; for the Bombay Deccan by Dr. Harold Mann and Mr. G. F. Keatinge; and for Madras by a band of enthusiastic students under the guidance of Dr. Gilbert Slater; and very recently Mr. H. Calvert, B. Sc., I. C. S., has in his book "The Wealth and Welfare of the Punjab" given us a very clear idea of rural life in the Punjab. But so far nothing serious and systematic has been done to give us some idea of the economic condition of rural areas in the United Provinces. It was with the intention of filling in this gap that I organised a small circle of students during the last winter to carry on Economic Surveys of some villages in the Allahabad District. We decided to call the circle "Kautilya Circle," and Professor H. Stanley Jevons, who was then the University Research Professor in Economics, very kindly consented to become our patron.

We selected the District of Allahabad because (*i*) it is just at hand, and therefore convenient for study, and (*ii*) its three geographic divisions, (*a*) the Doaba, (*b*) the Jumna Par, and (*c*) the Ganga Par, are representative of the three geographical parts into which the province of Agra itself is capable of being divided. In each of these three divisions of the district we have selected three villages for study; (*i*) a village far away from the city, and the modern means of communication, to give us some idea of things as they must have existed in a state of isolated or self sufficient economy (*ii*) a village away from the city and the modern means of communication, but irrigated by canal water to give us, more or less exclusively, the effects of improved means of irrigation; and (*iii*) a village close to the city and modern means of communication to give us an idea of changes brought about by these forces.

So far we have been able to carry out economic surveys of two villages, one Bhika *urf* Pura Mufti and the other Chowa. Both of these are situated in the Doaba region of the Allahabad District. Bhika was chosen as the first village of our enquiry for the following reasons: (*i*) it is very close to a railway station, and (*ii*) is not very far from the city of Allahabad. A village far away from the city and in the interior of the district would have presented great difficulties in coming and going, and might possibly have frightened the student members of the Kautilya Circle and thus have defeated one of the most important objects of the survey, viz., to get a number of young men interested and initiated into this kind of work. It was therefore considered desirable to begin with a village offering the least amount of inconvenience.

After selecting the villages to be the subject of our enquiries, we set ourselves to draft forms of enquiry to help us in the investigation. We went through many forms of enquiry used by our predecessors in other parts of India and after considerable study drew up three questionnaires. Questionnaire No. 1, printed below, is very largely based on the questionnaire that was used by Dr. Gilbert Slater in his village surveys in the Madras Presidency.[1] It has, however, undergone material changes to suit the peculiar features of zemindari villages in the province of Agra. In drawing up questionnaires No. 2 and No. 3 we have received assistance from the forms of enquiry used by Professor C. D. Thompson of the Ewing Christian College, Allahabad.[1] We acknowledge with pleasure the assistance that the labors of our predecessors in this particular field of investigation have given us.

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[1] See the Indian Journal of Economics, Vol. II Part I, pages 72-80.

In conclusion, I may be permitted to mention that our primary object in giving this brief account of the work of the Kautilya Circle, and in publishing the questionnaires used by its members in their investigation, as well as a survey of one of the villages investigated, is to derive aid and guidance from the criticisms that the readers of the Indian Journal of Economics may feel inclined to offer. We are searchers after truth and any light that our friends will give us will be received with much gratitude.

QUESTIONNAIRE No 1

For the Survey of a Zemindari Village in the United Provinces of Agra and Oudh

General instruction—Embody in your report the official information which is available, but endeavour also to test its accuracy and to correct it when possible. Use some distinguishing mark to indicate the source of your information. Thus the letter O can be used to indicate official information, N—unofficial, and N and O, official information, confirmed by non-official.

PRELIMINARY :

(1) Name of the village.
(2) Pargana. Thana.
(3) Tehsil.
(4) District.
(5) General description of geographical position, and position in relation to any forests, rivers, hills and means of communication and irrigation facilities etc., which may be in the neighbourhood.

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[1] Questionaires No. 2 and No. 3, for obtaining the family budget of an agriculturalist and of a village artisan, will be published in the April issue of the Indian Journal of Economics.

(6) General description of the physical constitution of the village.

(A). *Population.*

(1) Total population.
(2) Castes—Number of individuals and families belonging to each caste.
(3) Number of houses.
(4) Description of representative houses of each caste.
(5) Percentage of married men and women. Age of marriage. Boys and girls of child bearing capacity of the different castes.

(B). *Land.*

(*a*) Total area of village.
(*b*) Total cultivable area.
  (1) Total area of wet land.
  (2) Total area of dry land.
  (3) Total area of common waste.
  (4) Total area of pasture other than common waste.
  (5) Total area of fallow land.
(*c*) Total area of woods and forests.
(*d*) Total area of fruit trees and scattered shade trees.
(*e*) Number of tanks and wells.

(C). *Occupation of land.*

(1) Area cultivated by the land owner.
  (*a*) Sir land.
(2) Area cultivated by tenants.
  (*a*) Occupancy tenants.
  (*b*) Shikmi tenants.
  (*c*) Area cultivated by sub-tenants.
  (*d*) Area cultivated by lease-holders.
(3) Agricultural workers.
(4) Area of holding according to tenancy.
(5) Rents in money or kind.
(6) Land Revenue.
(7) Particulars of people who combine other occupations with agriculture.
(8) Time of unemployment.

(D). *Agriculture.*

- (*a*) Area under each of the principal crops.
- (*b*) Area yielding one crop per annum.
- (*c*) Area yielding two crops per annum.
- (*d*) Area yielding three crops per annum.
- (*e*) Area divided among the different soils.
- (*f*) Customary crop cultivation of wet, dry and garden lands respectively.
- (*g*) Types of ploughs used and the number of acres cultivated by one plough in each of the areas—of wet, dry and garden.
- (*h*) Other agricultural implements. (Special mention must be made of any new implements in use.)
- (*i*) Customs prevailing as to the exchange of services and agricultural capital.
- (*j*) Live stock.
    - (*a*) Working oxen.
    - (*b*) Male buffaloes.
    - (*c*) Cows.
    - (*d*) Young stock.
    - (*e*) Horses, donkeys, pigs, etc.
- (*k*) Number of carts.
    - (*a*) Carts and camels used on hire.
    - (*b*) Describe the custom of feeding cattle.
- (*l*) Manure :—
    - (*a*) Different kinds of manure used.
    - (*b*) Percentage of cow dung used for manure.
    - (*c*) Is cattle urine utilised ?
- (*m*) Garden cultivation. (Give here whatever information you can get about it.)
- (*n*) Chief insect pests and the methods of combating them.
- (*o*) Chief cattle diseases and methods of combating them.
- (*p*) How and where is wood obtained for fuel? for building? etc.
- (*q*) What is the cost of cultivation of wet, and dry land ?
- (*r*) Has there been any recent improvement in methods of cultivation ?
- (*s*) Do the villagers breed their own cattle or do they purchase them ?

(E). *The Village.*

- (*a*) Area of the village site.
- (*b*) Localisation of castes.
- (*c*) Dwellings of different castes.
- (*d*) Types of dwellings.
- (*e*) Unsatisfied demand for building sites.
- (*f*) Do the ryots exchange their land in order to get their lands continuous? If so, do they build and use field huts?

(F). *Subsidiary industries.*

- (*a*) Number of weavers.
- (*b*) Condition of the weaving craft.
  - (1) What yarn is used?
  - (2) What looms and winding implements?
  - (3) Do weavers co-operate at all?
  - (4) Give average earnings:
- (*c*) Is hand-spinning practised? If not, why abandoned.
- (*d*) List of other crafts in the village with details.
- (*e*) Give any information available.

(G). *Village mode.*

- (*a*) How do the villagers purchase commodities required?
  - (1) For industrial and agricultural use?
  - (2) For their own consumption?
- (*b*) Sale of village produce. Estimate the quantities of the village produce sold out of the village. Describe the methods of sale.
- (*c*) Condition of the village with regard to means of communication.
- (*d*) Extent of co-operation in village trading.
- (*e*) Further remarks.

(H). *Economic condition of village.*

- (*a*) Customary rates of wages.
  - (1) In money.
  - (2) In kind.
- (*b*) Differentiation between agricultural and other labor.
- (*c*) Current prices of staple food grains.
- (*d*) Number of families which make savings.
- (*e*) Utilisation of savings.

- (1) In agriculture or industries.
- (2) In savings banks.
- (3) Loans to neighbours.
- (4) In jewellery.
- (5) Other methods.

(*f*) Rural indebtedness.

(*g*) Number of sowkars and conditions of their services to debtors.

(*h*) Extent of indebtedness and manner in which debts are paid.

(*i*) Causes of indebtedness.

(*j*) Number of debtors who have liberated themselves from debt.

(*k*) Is there a co-operative credit Society? If so, add a special note giving the fullest possible account of its origin, progress and prospects.

(*l*) Sources of common income of the village.

(*m*) Expenditure of common income.

(*n*) Administration and supervision of common income.

(*o*) Give any particulars known about selling prices of land.

(*p*) Expenditure in building new temples.

(*q*) To what extent is advantage taken of the Agricultural Loans Act and the Land Improvement Loans Act?

(I). *Sanitary conditions of the village.*

(*a*) General note.

(*b*) Prevalence of epidemic diseases like cholera, plague, tuberculosis.

(*c*) Estimated rate of infantile mortality.

(*d*) Snake bites.

(*e*) Medical assistance available.

(*f*) Prevalant customs as to infant marriage and *purdah.*

(*g*) Nature and supply of water for domestic and drinking purposes.

(*h*) Do the villagers bathe and wash their clothes in the same tank or stream which they use for drinking?

(*i*) Area per head of house accommodation.

(J). *Education.*

(*a*) Type of education given.

(*b*) Number of boys in attendance per caste.
(*c*) Number of girls in attendance per caste.
(*d*) Average duration of school life for boys and girls respectively.
(*e*) Number of adults able to read the vernacular.
(*f*) Number of adults able to write the vernacular.
(*g*) Number of people who know English.
(*h*) Number of boys or girls, who have proceeded to more advanced schools elsewhere.
(*i*) How have their school expenses been met?
(*j*) Have any gone to Agricultural Colleges?
(*k*) Have any boys who have received a good education settled down in their own villages? If so, how do they use their education?
(*l*) How many books and of what character in the village?

(K). *Village Administration.*

(1) Panchayat.
(2) Village administration.
(3) Sanitary administration.
(4) How much crime has there been in recent years?
(5) Are any villagers engaged in litigation, and if so, why?
(6) Are any in debt in consequence of litigation?
(7) Are offences and civil disputes dealt with in the village without resort to the courts?

(L). *History and progress of village.*

(1) What evidence is there to show either economic deterioration or economic improvement in the past?
(2) What opportunities does the village seem to have for economic improvement?

(M). *General.*

(1) Representative family budgets of the different classes in the village.

SURVEY OF THE VILLAGE BHEKA urf PURAMUFTI

This village represents the third type in the Doaba region of the Allahabad district. It is named Bheka *urf* Puramufti. For revenue purposes it is attached to

Pargana Chail, Tehsil Allahabad or Thesil *Khas*. Pura Mufti is itself a police station. Pura Mufti lies about 12 miles from the Allahabad City to the west, and about half a-mile to the north of the Manauri Station on the E. I. Ry. The Grand Trunk road passes through it.

Although we can not in any sense claim that it is a village typical of the rural life in the district or in the Agra Province, yet it is fairly representative of the third type of village in the district as well as in the province. It is near enough to the city to enable its inhabitants to go there for selling village products, such as vegetables, curds, and guavas. It is also very close to the Manauri Station, which has a large oil factory maintained by the East Indian Railway Company, and where some of the villagers find employment. This may account to a certain extent for the high standard of wages found in this village.

GENERAL DESCRIPTION

(a) The village, like so many of the villages in the Indo-Gangetic plain, is surrounded on all sides by the cultivated area of other villages, names of which one can easily find for himself from the annexed map. It has no forests, rivers or hills near about, and its soil is of the alluvial kind, characteristic of the plains. It is on the whole light loam in texture and light brown in colour; but here and there it passes into sandy loam and very seldom into the heavy one. As it lies in the catching area of the Ganges waters, (the river lying about four miles towards the north,) soil erosion is fairly noticeable. As one goes from the railway station towards the village, one can notice a number of water courses, and a number of eroded field edges, all coming to an abrupt close near the road. The road has acted here the part of a reclamation *bund*, and must have done a lot of good to the area lying between the railway line and the *pucca* road.

(b) *The Village Abadi.*

The *abadi* (site) of the village does not consist of one compact group of houses like so many other villages in the plains. As it is a large village, its total population is divided between the central villages of Bheka and Pura Mufti which lie immediately to the north of the road, and its four *purvas* (hamlets), two of which lie on the south-east of Pura Mufti and are known as Ghamalwarpur and the remaining three as (i) Pura Ahiran (ii) Thakurganj and (iii) Hyderganj. All these lie to the north of the road.

Total number of houses in all these is about 465 and total population in 1911 was 1752, while at present it is roughly estimated at 1500. (Census figures for the year 1921 are not yet available.) This is the figure arrived at by getting some idea of total number of families in the village.

In Pura Mufti and the *purvas* of Ghamalwapur, Hyderganj, Thakurganj, and Pura Ahiran Hindus predominate, while in Bheka Musalmans are in the majority. In addition to the ordinary village serving classes such as the potters, carpenters, blacksmiths, and the village menials, such as the barbers, washermen, sweepers and so on, the village is peopled by Kurmis, Kunbis, Kachies, Pasis, Chamars, Brahmans and Musalmans. There are one or two representatives of the Baniya caste also but they do not live in the village.

From enquiries made it would seem that there is no unsatisfied demand for dwelling houses. As a matter of fact we found many houses either locked from outside or altogether deserted, the inmates either having died during the last influenza epidemic or migrated to the city.

Then again there is no system of having farm buildings of any kind whatever, unless we could include the small thatch *ataries* that are improvised during the *kharif* and the *rabi* to keep a watch over the ripening crops. These consist of four rough and unhewn branches of trees one end of which is inserted in the ground, and thus made to stand perpendicular. At the other end of these four more branches are put horizontally to these, and some two or three more are also placed in the middle. Then the whole upper structure, parallel to the ground below, is covered with thatch, and thus provides a raised resting place overlooking the entire field. Generally it is covered with some sort of *chapper* (a roof of thatch) underneath which the watcher sits during the day and sleeps by the night.

LAND: DISTRIBUTION, TENURE, AND RENTS

The total area of the village is 840 acres or 1487 bighas and one biswa. Of this land 655 acres is under cultivation and is held by various cultivators. The balance consists of area fit for cultivation, but not under cultivation, *banjar* (barren land), under gardens and the village site. The division of the village land can perhaps best be shown by a table.

Total area of the village	840 *acres.*
Area under cultivation in 1922	566 ,,
Cultivable area but not under cultivation in 1922.	86 ,,
Banjar	21 ,,
Under gardens (guavas)	24 ,,
Parti qadim	32 ,,
Fallow land	12 ,,
Under abadi	65 ,,
Under talabs	34 ,,

Out of the total cultivable area (655 acres) 198 acres is irrigated land, while 457 acres is unirrigated. Of the 198 acres of irrigated land 155 acres is *chahi* or watered by wells, while 43 acres is *talabi* or watered by *pokhars*. There are 21 *pakka* wells and 62 *kachcha* wells. However all these are outside the *abadi*, the wells within the *abadi* of which there are about a dozen not being included. There are no tanks in the village, but it has five big *pokhras* or dugouts in which rain water accumulates and is used for watering the fields, washing clothes, and bathing purposes.

The total area under cultivation (566 acres) is divided into 1531 fields of varying sizes. The size of the largest field is 3½ bighas, while that of the smallest one biswa only or 1-20th of a bigha, and the size of the average field comes to about one bigha. This shows the extreme condition to which the sub-division of land has gone on, all due to the prevailing Hindu and Mohammedan Laws of succession. So far nothing has been done either by the public or by the Government to stop this fragmentation, which is an evil of very great importance from the point of view of good agriculture.

All these fields are cultivated by about 200 cultivators, and the average of land per cultivator is about 10 bighas. The largest area under one cultivator is 30 bighas, and Kalidin Kunbi of the Purva Ghamalpur is a good example of the very few who belong to this class. The smallest area per cultivator is one bigha, and Hanuman of Bheka may be taken as the representative of this class. The number of holdings of various sizes now is as follows:—

Size of Holdings.	Number of such Holdings.
More than 30 *bighas.*	Nil.
30 „	4
25 to 30 „	7
20 to 25 „	19
15 to 20 „	28
10 to 15 „	55
8 to 10 „	39
6 to 8 „	17
4 to 6 „	14
2 to 4 „	8

1 to 2	,,	7
Less than 1	,,	2

Although it is not easy to fix upon a standard economic holding, yet we see from the above table that the size of holdings is small in most cases, and this is recognised by most students of rural economy to be a very serious evil. The condition is even worse, however, than the size of the holdings suggests, because the land held is not only small in area but is divided into a large number of fragments which are found scattered all over the village area. Thus, for example, the holding of Ram Swaroop Brahman which is fairly large (56 Bighas) consists of 25 separate fields, in eight separate groups in Pura Mufti, and three others in an adjoining village. Or again, the holding of Chhedi Kachhi, consists of 28 fields, in 18 separate groups. The same is true of others. The evil results of this from the point of good farming are too obvious to need any lengthy discussion here.

The village is held under the zemindari tenure of the Agra province, and the major part of it (14 annas in the rupee) is under Rai Sanwal Dass Bahadur, and the remaining 2 annas is held by more than one zemindar, who are Musalmans. Practically all the zemindars are absentees and work is carried on by *karindas* and *gomashtas* (agents). Leaving aside 79 acres of land which is cultivated by the zemindars (18 acres being *khudkasht*, and 61 acres *sir*) the remaining 577 acres is cultivated by tenants. The greater part of this (490 acres) is held under occupancy tenure, while only 79 acres are under tenants-at-will. Let us show the occupation of land by a table.

Total area cultivated by tenants	577 *acres.*
,, under occupancy tenants ..	490 ,,
,, ,, new ,, ,, ...	8 ,,
,, ,, tenants-at-will	79 ,,

While most of the cultivators cultivate their own fields some of the big occupancy tenants let their lands to sub-tenants and we find 99 acres thus cultivated by sub-tenants. The system of giving long-term leases does not exist in the village. Some of the residents of this village hold land in adjacent villages; thus Ram Swaroop Brahman holds 24 bighas in Pura Mufti, 16 bighas in Fatehpur, eight bighas in Akbarpur, and eight bighas in Salapur. Out of this 56 bighas of land he himself cultivates only 12 bighas, and the remainder is let out to sub-tenants, at higher rents than he has to pay to his land-lords.

Practically all the rents are paid in money; there is no *kankut* or *batai* system. The assets of the land-lords, according to the papers of the Patwari, come to about Rs. 6,846. Out of this they have to pay Rs. 2,920 as land-revenue, and Rs. 292 as *abwab*, leaving as the net share of the zemindar Rs. 3634. That is to say, out of the gross rental the Government takes something like 42% while something like 58% if left with the zemindars. What proportion the share of the Government bears to the gross produce would have been a very interesting fact to know, but unfortunately we were unable to obtain satisfactory answers to questions which would give us the necessary information. Most of the villagers do not like to answer questions of this kind frankly, and even if they feel inclined to do so, their answer may or may not be reliable. They do not keep any accounts and in nine cases out of ten they themselves do not know the facts. Only a few men out of a dozen tenants that we examined seemed to give answers to our questions ungrudgingly and to the best of their knowledge. From the statements of three cultivators it would seem that the share of the Government out of the total produce during the agricultural year 1922-23 came to about 11 per cent. No generalization can be made from this figure, because of the meagre data,

AGRICULTURE

Agriculture in the village of Pura Mufti is carried on on the old traditional lines. We saw nothing to suggest to us that the villagers were using any of the modern methods, or improved implements, of agriculture. Even for crushing sugar cane they are using the same old stone mill which loses something like 40% of the juice. For this purpose they have a number of these mills placed in an open ground on the south-eastern side of the road.

The following table will give some idea of the various crops grown in the village during the agricultural year 1922-23 or *1329 Fasli*.

RABI	Wheat	70	acres.
	Rice	63	,,
	Barley	70	,,
	Wheat and barley or *gojai*	13	,,
	Baijhar (barley and grain)	92	,,
	Gram	82	,,
	Gram and wheat (*gochana*)	5	,,
	Peas	19	,,
	Potatoes	4	,,
	Gajar	1	,,
KHARIF	Jowar	2	acres.
	Bajra	4	,,
	Jowar and arhar	156	,,
	Bajra and arhar	81	,,
	Dhan (*bhadain*)	63	,,
	Mung	1	,,
	Moth	2	,,
	Medwa	4	,,
	Sanwan Kakuni	4	,,
	Sesamuni	1	,,
	Chari (jowar for fodder)	21	,,
ZAID	Fruits and vegetables (kakri and karela etc.,)	15	acres.
	Mircha (red pepper)	4	acres.
	Sugar cane	11	acres,

The greater part of the total area under cultivation yields one crop per year in the rotation of wheat in one year, followed by *jowar* or *bajra* and *arhar* in next *kharif*, followed by peas in the following *rabi*, or again wheat in the first year followed by *jowar, bajra* and *arhar* in the following *kharif*, fallow in the second year and wheat in the third. While 75 acres yields two crops per year, there are only 3 acres that yield three crops per annum.

Cultivators in this village are using the ordinary country plough, and other agricultural implements which are made locally, and from the replies received from a large number of them it would appear that on an average a cultivator with one *hal* (i. e., with one plough, and two bullocks) is able to manage from 10 to 12 bighas of land. For the *kharif* crops generally two or at the most three ploughings are done, and sometimes if the rains are late seed is sown after one ploughing only; while the fields for *rabi* crops begin to get ploughing after the first rains and well up to the middle and often to the end of October, in all receiving between eight and twelve ploughings. Fields for the ordinary *kharif* crops generally do not receive manure, while practically all the fields for *rabi* crops are manured. Cultivators in Pura Mufti use the ordinary village manure which we found scattered in heaps all round the village *abadi*, and which consisted of sweepings of the house, the kitchen, and the cattle stalls. A very crude device to make use of the cattle urine is also adopted. It consists in the spreading of ashes or earth under the cattle and then removing it to the manure heap every second or third day. They say that the ashes keep the cattle warm, and do not seem to do it to secure the contents of urine for the purposes of manure. Although sweepings of the cattle sheds, which in very few cases are separate from the rooms used for the use of the members of the family of a cultivator, are utilised for the purposes of manure, yet it is only during the rainy season for three or four months that the process of preparing cakes for burning as fuel is stopped, and we may therefore say that by far the greater part of cattle dung is lost as manure. Generally six cart-loads (each cart-load having about 60 basketsful) of this are applied to a *bigha* of land. They are not using any of the modern chemical fertilizers, nor do they use either green or bone fertilizers, though of course the skeletions of dead animals are left to decay in the fields.

Kharif crops, unless the rains fail completely, do not require much watering, but the rabi crops require from two to three waterings. The first watering of wheat and barley is done 10 or 12 days after the sowing, the second somewhere about the time of flowering and the third in between these two if the winter rains do not appear. To water one *bigha* of wheat or barley, with one *pur* (*i.e.*, one pur and two bullocks, one man for driving the cattle, one man, or generally a woman, for receiving the *pur* and getting the water out of it, and one woman or man or a boy for passing water to the different parts of the field) about 10 to 15 days are required. All watering in this village is done from wells, and very little from the few *pokhras*. Something like between Rs. 30 and 40 is required to build a *kachcha* well while to build a *pacca* one *para* (*i.e.*, on which only one pur can be worked at a time) takes between Rs. 400 and 600; and *dopara* may cost between Rs. 700 and 900. Both Ram Swaroop Brahman and Kalidin Kachi gave us to understand that if a field of wheat is given three waterings the produce per *pukka bigha* is between ten and eleven maunds; if two then between six and seven maunds, while if only one watering is done then between two and three maunds only.

It is on the whole a prosperous village, and most of the cultivators keep their own seed. Those who do not, get it from Ram Bharos who lives in the neighbouring village of Manauri. No special care is exercised either in the selection or the storage of seed. The same traditional methods are followed as elsewhere. The following table will give some idea of the quantity of seed sown per *bigha* of each crop.

Crops	Seers per bigha.
Wheat	30
Barley	30
Gram	15
Gram and barley	25
Small peas	15
Big peas	30
Bajra	1 seer
Jowar	1 ,,
Urd	½ ,,
Mung	½ ,,

As in other parts of the United Provinces weeding and hoeing are combined, and are usually done by the help of a simple instrument known as *khurpi.* As a general rule weeding is more important during the *kharif* as the undesirable plants are far more luxuriant during this *fasal* than they are during the *rabi.* But in the village under study as no rich *kharif* crops like cotton are sown each field receives practically the same number of weeding operations during both the *fasals.* The usual system is to weed once in between two waterings, generally three or four days after it. In all one may say that during the *kharif* each field receives from two to three weedings while during the *rabi* between three and four. Weeding is generally done by women, and children; very seldom by men also.

From enquiries regarding harvesting we could not gather that use was made of any special methods or of modern implements; but we noticed that the stalks of jowar and bajra were allowed to stand in the fields after removing the corn-heads from them. We saw them standing in the fields well up to the end of December, and people cutting them as required for the cattle. The corn is separated from the chaff by cattle walking over them, as is done in other parts of the United Provinces.

As is evident from the difference in the returns of population for the year 1911 and 1921, population has decreased in the village, and laborers are not easy to get. Besides this, the village is not very far from the city of Allahabad, and is very near to the Manauri Oil Factory, which employs 504 men, women and children at fairly high rates of wages (14 annas for adults men, 12 annas for adult women, and 9 annas for children, per day of 8 hours for adults and 6 hours for children). The result is that the wages of agricultural labor in the neighbouring villages are also higher than elsewhere. For the unskilled laborer for giving general assistance in agricultural operations the usual rate of wages is between five and eight annas at present, whereas some three years back it used to be between three and four annas per day. For special kinds of work there are special rates. Thus the man who drives the bullocks gets four and a half annas per day plus half a seer of *chabena* (parched grain), the laborer who pulls the pur (generally a woman in this village) gets three and a half annas and the same quantity of *chabena*; for tilling the field one has to pay Re. 1-4 per day, and this gives him the use of *one hal* and one laborer. The laborer who passes water from one *kiarie* to another gets three annas per day, and is generally either a woman or a boy. During the harvesting time men who cut the crops get from two seers to two and a half seers of grain while the weeders, who are generally women, get one and a half seers.

Above are the rate of wages for contract labor, but each cultivator has to pay the following rates in kind to the village servants for each *hal* he keeps:—

Hajjam (barber)	20 seers.
Kumhar (potter)	20 ,,
Dhobi (washerman)	20 ,,
Barhai (carpenter)	20 ,,

We have already mentioned in passing that the cultivators use the very simplest of agricultural implements, which they get from the village blacksmiths, Anandi and his father. For every new *hal* he makes he charges two rupees and eight annas, while repairs are done free of charge for all those who pay him the customary *jora* (20 seers of grain per *hal*). For mending and making beds he is paid one seer of grain, and if he works for one full day for any one he charges twelve annas, or six annas a day to his *jijmans* (people who pay *jora* to him).

Those who do not store their own seed, and there are few such cultivators in this village, get it from Ram Bharos of the village of Manauri. Both seed and *khad* (grain taken for food) are advanced on the *deorhi* system by this gentleman i. e. if at the beginning of the *rabi fasal* (sometime in October) he advances one maund of wheat to a cultivator, then at the end of the *fasal* (sometime about April) he is entitled to get one and a half maunds of wheat. And if the cultivator fails to pay then he transforms the quantity of wheat into rupees at the prevailing market rate, and then charges 25% interest in future. If a cultivator borrows cash he has to pay 25 per cent interest compoundable at the end of every *fasal.*

With very few exceptions the bullocks and he-buffaloes we saw in the village were lean and hungry looking. Time after time we were told that they get nothing but *karbi* (stalks of *jowar* and *bajra* cut into small pieces) and *bhusa* to eat. On an average an ox eats about 10 seers of *bhusa* a day or 15 seers of green *karbi,* and a buffalo takes 20 seers. And it is only in those parts of the year when they are very hard worked, such as during the ploughing season or the watering of *rabi,* that they get a seer or so of grain. Off and on a dose of salt is also given to keep them fit. We did not come across any scientific method of storing fodder, green or dry. It is stored in *kachcha* rooms, on the tops of houses, or outside the houses in heaps, or left standing in the fields and cut as required. In most of the houses there is no separate place for the cattle; during the day they are kept in the open near the dwelling place of the owner, and in the night herded in one of the rooms of the house. But whether in the house or out of it, each is provided with an earthen vessel called *nand* for taking fodder. And the *nand* (a tub shaped earthen pot) is imbedded in a raised platform of kneaded mud to make it easy for the cattle to reach their food. They are watered either from the wells or from the neighbouring *pokhras* of which there are four or five in the village.

INDUSTRIES OTHER THAN AGRICULTURE

There are very few industries in this village other than those directly connected with agriculture. Even weaving is not important as there.are only five families of *jolahas* (Musalman weaving caste) who weave the coarsest kind of *gazi* and *garah*. The craft is dying, and this in these days of *khaddar prachar*. They use the mill made yarn, and their looms are of the antidiluvian kind. The only other crafts practiced in the village are pottery making and carpentry with which is also combined the smithy. Then there is a sweet-meat seller who also does a little of money lending.

A very large part of the commodities required by the people of this village are purchased from a *bania* who deals in such commodities as flour, *dal* (pulse) and grain, salt, tobacco and many other "nick-nacks," such as glass beads. Cloth they purchase from a *hat* (a periodical temporary bazaar that takes place once every week on Sunday near Manauri). Besides this one of the Musalman zemindars also deals in cloth and gives it to the cultivators on credit. Their more expensive purchases on ceremonious occasions are made in the city of Allahabad.

Not all the villagers go to the city to sell their produce.

Most of them sell it to the village *banias* who take it to the city. There is no system of co-operative selling or purchasing. However, such village products as guavas, vegetables, and milk products are taken by the producers themselves to Allahabad and disposed of there.

The system of exchange in the village is regulated on the basis of money, and barter has been completely wiped out. The Government *seer*, which is of eighty *tolas* (one tola is very nearly equal to one rupee in weight), is not very much in use in the village, and the common measure of weight is the seer of hundred *tolas* which in the village slang is known as *pakka seer*, while the half of it is known as the *kachcha*. And one would do well to bear in mind this distinction of *kachcha* and *pakka* while carrying on investigations in rural areas.

SAVINGS AND INDEBTEDNESS

Our enquiries lead us to the conclusion that although the village as a whole is not very much indebted and that indebtedness has decreased very much during the last three or four years of high prices, yet there are very few cultivators indeed who are making any savings. There is neither a savings' bank nor an agricultural co-operative credit society ; therefore the only way that they utilize their savings is either in loans to neighbours of which there is plenty of evidence, or in jewellery. In the village itself there is no *sowcar*, and those who need assistance in this way have to go to Ram Bharos of the village Manauri. Although we could not find details from this gentlemen, yet it seems from the answers given to us by a number of agriculturists that a fairly large number of the cultivators of Pura Mufti have their dealings in money with him. In this connection it will not be out of place if we mention that not only are savings not utilised for the development of farms, for sinking wells, etc., but that no advantage whatever is taken either of the Agricultural Loans Act or of the

Land Improvement Loans Act. The answer to our question why they prefer to borrow money from the local *sowcar* on such a high rate of interest when the Government is ready to lend money on such easy terms, invariably was that the terms are easy only in theory, and that in practice they are found to be equally high if not higher.

CO-OPERATIVE ACTIVITY

Leaving apart the caste Panchayats, which still exist in this village amongst the Pasis, the Kunbis and the Kachhis, there is no vestige of any co-operative activity in the village. It was painful indeed to listen when Ram Swaroop Brahman and others told us that during the last rainy weather when most of the villagers suffered from malaria there were occasions on which there was nobody to give even water and medicine to the sick. Indifference to neighbourly obligations we thought was a characteristic of city life, but now it seems it has found its way into rural life as well. Perhaps one reason for the absence of any common source of income for meeting expenses on any common activity may be found in the very heterogenous character of the population. It is neither an out and out Hindu nor Musalman village, and thus lacks coherence of purpose and unity of interest.

SANITARY CONDITIONS

The general sanitary condition of the village is unsatisfactory. Immediately surrounding the village habitations there are heaps of household sweepings and cow dung, and a number of *pokhras* full of stagnant water, and the two together provide a very welcome place for the breeding of obnoxious germs. The results of this can be seen in the continual visitations of malaria, influenza and plague to which the village has been subject during the last ten years. Happily cholera has never appeared in the village so far and this may be accounted for by the good practice of never using the stagnant pond water either for bathing or for drinking purposes. Conditions within the houses are equally dirty. Leaving apart the *chowka* (cooking room) which we invariably found to be perfectly clean, the rooms and the court yard were invariably unclean. There is no provision in any house for the water to go out freely, with the result that it goes on soaking into the corner of the courtyard where the household utensils are cleansed and which is also very often used as urinal and bathing place by the females. It smells awful and one may well wonder how these people manage to live, when the surroundings they live in, the clothes they put on and sleep in, and the rooms they live in are so dirty.

There is no hospital in the village but in the adjoining village of Akbarpur Salapur there is a Hakim Sahib, who is maintained by Nawab Mohammad Isa Saheb (he gives him Rs. 50 a month in wages), and who distributes medicine gratis to the people of the neighbouring villages.

SOCIAL CUSTOMS

The heterogenous character of the population keeps us from giving any general statement about the village as a whole. But one thing may be said that leaving apart the rich Hindus, who are very few, and the Musalmans, there is no *purdah* observed by the women of the village. The custom of early marriages is common amongst the Hindus, whilst the Musalmans generally marry late. Among the Brahmans, the Kachhis and the Kurmis, marriage of a boy generally takes place between the ages of ten and twelve while that of a girl between six and ten; whilst amongst the Pasis, the potters and the blacksmiths infant marriages are the rule. We saw boys and girls three or four years old who were married.

EDUCATION

The village has a primary school maintained by the District Board where education is given free. Here are taught both Urdu and Hindi and other subjects like arithmetic and the geography of the district. The head-master gave us to understand that some elements of agriculture are also being taught and in the compound of the school we saw a few vegetables, and other things like mustard, wheat and castor growing, which we were told were the result of the work of the students. There were 96 students on the roll out of which there was not a single girl. The number of students per class and per caste may be gathered from the following table. There being no record of castes in the register, and students of other classes being absent at the time we reached, we could find details as to castes about only the *alif* and *bai* classes.

Class	Total No.	Musalmans	Kunbi	Brahman	Bania	Pasi	Others
Alif ..	25	8	10	5	1	1	
Bai ..	31	3	12	7		4	5
First ..	12						
Second ..	13						
Third ..	12						
Fourth ..	3						

The average duration of school life for boys and girls is six and four years respectively. There are very few adults amongst the Hindus of the village who can read and write even the spoken languages but amongst the Musalmans the majority can read and write Urdu. There are only two Musalmans who know some English, and they do not live in the village.

VILLAGE ADMINISTRATION

There is, as we have mentioned above, no common Panchayat for the administration of the village affairs. Nor do the zemindars reside there, and the work is being carried on their behalf by *karindas*. The village has a police station, and the *patwari* also resides there. As most of the cultivators are occupancy tenants there is very little litigation and the only cases that go from this village are either of *baqaya lagan* (arrears of rent) or of *baidakhli* (ejectment) and they are not many. But there is one evil feature of the village administrative life which we may as well mention here, and it is that in the two and a half annas share of the village which is not under Rai Sanwal Dass Bahadur there are a number of Musalman zemindars, who were once rich and influential. These gentlemen are constantly quarrelling amongst themselves, and each has a Pasi retainer to overawe the other co-sharers. These Pasi retainers keep large heads of pigs which roam about the village and eat away the growing crops. Nobody dares turn them out as that brings the wrath of the landlords. We were told by a number of cultivators that the pigs are a nuisance to the village, and if they could be got rid off it would make the life of the cultivator a little happier than it is just at present.

CONCLUSION

This has brought us to the close of our enquiry in the village of Pura Mufti, a village having possibilities of great improvement in many directions if only its landlords could realise their responsibilities towards it. Of this we are sorry to observe we found no trace. Very well could a rich and prosperous zemindar, like the Rai Bahadur Sanwal Dass, afford to maintain a demonstration farm, where improved methods of farming could be practised and the use of improved implements shown to the great advantage of his tenants. He could easily assist in the formation of a co-operative credit society and through it arrange for the provision of safe and easy money, good seed, and other necessaries of agricultural life. He could, if he had the vision and the sympathy of a true leader of men, arrange for better sanitation, better social habits; and by joining the people of the village in works of common good he could create that sense of one-ness which we found so sadly lacking in the village. With an absentee zemindar the village lacks its centre of gravitation, and the many evils we have noted above are due to it.

REVIEWS OF BOOKS

ENGLISH AND FOREIGN

Common Sense Economics. By L. LE MESURIER. London: John Murrey. 1922. Pp. 220.

Common Sense Economics is a very useful text-book in economics. The author arouses the interest of the reader at every turn and must surely succeed in stimulating his students to further study of many of the problems on which he is only able to teach briefly; such as unemployment, the capital levy, and various questions of social reform. His method of introducing a new part of the subject is always vivid and interesting. His treatment of population and of the question of diminishing returns is unusually good. Most authors find the greatest difficulty in dealing with these problems. His description of the economic services of land is one of the best we have ever seen and he is to be particularly praised for his insistence all through that capital can only be productive by making labor more productive. Another good point is his explanation of the evil which is done by the diversion of our resources to the production of luxuries.

It is all the more remarkable because of his clear realization that all productivity comes through labor that he refuses to admit that men and women are the real wealth of a country; and condemns this idea as a "stimulating metaphor". If we regard as wealth both the machines and the goods they produce, we can not accept his argument that it is impossible to regard as wealth both the producers and the goods they produce. The author is fond of scoring a point against schools of economists with whom he does not agree. We have no objection to his increasing the piquancy and zest of his book in this manner. But when he introduces his criticism into the midst of a sentence which ought to make clear one of the vital points of economics, it appears to us quite unpardonable. For example, we find (page 13) the following sentence, "As the value obtained lessens, and the sacrifice incurred increases, it is clear even without the use of figures and diagrams, which are a thorn in the flesh and a stumbling-block to many excellent and otherwise intelligent persons, that a point will be reached where the two meet as it were; that there is a limit or a margin beyond which the man will not pay and below which he can not obtain the satisfaction." We can not help had been less of a stumbling-block to him, he would not have confused the point of satiety and the point of marginal satisfaction in the very next sentence, especially when his foot-note makes it clear that not all economists do use these two terms interchangeably. Although profits and interest are clearly distinguished, there seems to be some confusion between them in discussing the Marxian theories. Many subjects are touched on so lightly that it might appear better if the author had omitted them altogether; but when we consider how successful he has been in arousing interest, we agree that he has been right in touching on all these problems and trusting that the mere mention of them in such a stimulating way will succeed in driving the students to the larger books of which a brief, but choice bibliography is given.

C. D. T.

Public Finance. By M. E. Robinson. London: Nisbet & Co.; Cambridge University Press. 1922. Pp. 169. Price: 5*s*.

This book is the third in the series of the Cambridge Economic Handbooks published under the general editorship of Mr. J. M. Keynes.

It is an exposition of the principles of Public Finance in the light of the financial problems of England particularly during the period (1914-19) of the Great War. Naturally it goes beyond this period and discusses its financial legacy—the burden of debt and interest charges and the problems these entail. The treatment throughout is clear, sound and full of interesting matter.

The book contains 10 chapters. Chapter I is introductory. Chapters II to VI deal with the various aspects of taxation including a word on such recent topics as the Excess Profits Tax, Professor Rignano's scheme of a tax on inheritance 'progressive in time' and a levy on capital. One thing worthy of note in this portion (Chapter II) is the doctrine of minimum sacrifice in taxation. This is not a new doctrine, but the way in which the author has interpreted it has almost invested it with a new garb. Hitherto it referred to the immediate loss in satisfaction to the taxpayer. The author has rightly widened its scope by looking at it from the long period point of view also. She observes (p. 29): "A tax may reduce economic prosperity both by absorbing wealth yielding immediate economic satisfaction, and by absorbing wealth which would otherwise contribute to future production. If both these factors are considered the logical economic position for the state would seem to be to attempt as far as possible to distribute taxation in the way that will, taking both present and future prosperity into account, injure as little as possible the permanent economic interests of the community. This involves considering not only the immediate economic loss in satisfaction to the tax-payer, but also the productive value of the wealth taxed."

Chapter VII concerns itself with Local Finance. Chapters VIII and IX deal with War Finance and the Post War Burden of Debt respectively. And chapter X discusses Future Policy, i. e., schemes to ameliorate this burden and balance the budget.

We have no hesitation whatsoever in recommending the book to our students and to others interested in Public Finance. We are confident it will prove of great benefit.

G. D. K.

Germany's Capacity to Pay—A Study of the Reparation Problem. By H. G. Moulton and C. E. McGuire. New York: McGraw-Hill Book Company, Inc. 1923. Pp. 384.

This book is a publication of the Institute of Economics, established by the Carnegie Corporation of New York "with the sole object of ascertaining the facts about current economic problems and of interpreting them for the people of the United States in the most simple and understandable form", and to be administered "without regard to the special interests of any group in the body politic, either political, social, or economic". Indeed the object is a landable one, and the publication in hand seems to have amply and admirably fulfilled it in every respect, for not only does the book present an unbiassed view of the whole Reparation Problem, but the presentation itself is very lucid and entertaining. Scholarly details which would have been irksome to the general reader, have been relegated to the appendices, which constitute about one-third of the whole of the book.

The opening chapter clearly reveals the two-fold nature of the problem of foreign indebtedness—the internal budgetary and the external foreign trade aspect. Many current fallacies on the point are examined critically, and due importance is given to the external side of the question, that is of "translating domestic revenue into acceptable means of payment in foreign countries."

Three succeeding chapters are occupied with a discussion of the foreign trade aspect of the question. The whole discussion is highly illuminating and interesting. The writers have arrived at the present foreign trade requirements of Germany, from a review of the past history, in quite an impartial manner. Their own conclusion is "that no one can say precisely what amount Germany can pay, because nobody knows whether German exports can be made to exceed German imports." However, the proposition is clear that Germany can only pay—if the payment is not to be merely temporary—by an excess of exports over imports, and by *no other* means. The peculiar industrial organisation of Germany does not permit her to provide for this export surplus without "the procurement of indispensable imports." So the import requirements of the country are indicated to be " the very heart of the problem." The vicious circle is here at once apparent and seemingly insoluble.

Then follows the consideration of the budgetary aspect of the question, and its importance for the amelioration of the monetary situation is emphasised. But the fact is again re-called "that the making of reparation payments is not a mere matter of domestic household economics." On the contrary, it has important international implications. Germany may have her land, labor, capital, and managerial capacity—all intact; yet she is "economically impotent" owing to the lack of that international economic adjustment which appears to figure as a fifth, and, in modern times, perhaps, the most important, factor for efficient production. This is indeed one of the important suggestive ideas which can be gathered from the book.

The crux of the whole problem may be put in the words of the authors themselves as follows: "No threat or compulsion, no guarantee of any kind whatsover will ensure the payment of any definite sum. If the Allies hope to get paid, there is only one policy to follow, namely, to facilitate the recovery of German import and export trade, and then to require the delivery of whatever excess of exports may be developed". Here is a sound word of advice for the Allies, coming as it does from purely academic students of the situation. The sooner they act according to it, the better for them, and for the rest of Europe—nay, even for the world at large.

The last sentence in the main body of the book breathes in an atmosphere of complete impartiality like the rest of the book. All is left to be a matter of opinion. This is only in consonance with the aim and spirit of the whole work.

The appendices A to G treat in minute scholarly details certain topics referred to in a general manner in the main body of the book, and are of immense value to the earnest student. Appendix H is also valuable in another way, in that it presents a brief tabular summary of the principal official proposals for the settlement of the Reparation Problem from 1920 to June 1923.

We congratulate the authors for bringing forth this unprejudiced, scientific, and exhaustive study at such a juncture. The Reparation Problem in undoubtedly of vital importance for the economic well-being and solidarity of the world at this time. It is creating a deadlock because the men who have it in their power to settle it never look at it, presumably unconsciously, with a disinterested perspective. If the present study could do something in guidance towards the right solution of the problem,—as it may be hoped it will—then a great feat will be accomplished by economic science.

We also congratulate the Institute of Economics for setting themselves to such a noble task, and we await with interest the forthcoming publications of this series.

R. K. VAISH

RECENT PERIODICALS

ENGLISH AND AMERICAN

THE ECONOMIC JOURNAL

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Ricardo's Ingot Plan. By James Bonar.

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Population and Unemployment. By Sir William Beveridge.

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Misstatement of Age in the Returns of the Census of Scotlnnd. By James Craufurd Dunlop.

THE BANKERS' MAGAZINE

SEPTEMBER 1923

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The Progress of Banking in Great Britain and Ireland During 1922.

Conditions Precedent to a General Trade Revival. By A. H. Gibson.

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THE JOURNAL OF POLITICAL ECONOMY

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Social Sciences and the School Curriculum.
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THE AMERICAN ECONOMIC REVIEW

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LABOUR GAZETTE

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THE CALCUTTA REVIEW

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Calcutta University and the Problem of Unemployment.
By J. W. Petavel.

November 1923

Agriculture and Agricultural Cattle in India.
By Nilandra Chatterjee.

DIRECTORY OF ECONOMISTS IN INDIA

The following directory hus been compiled from University Calendars and from information submitted by various persons of whom inquiries have been made. Inasmuch as some of whom we made inquiry failed to respond, there are doubtless a number of errors and omissions in the list. We shall be glad, indeed, to receive corrections, and to print the same in our next issue. *Managing Editor.*

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THE FINANCING OF INDIAN INDUSTRY

P. P. PILLAI, PH. D., F. R. E. S.

In any attempt to sketch the present position and the prospects of Indian industries the quantity of capital in the country and its availability for industrial purposes will have to be carefully considered. The problem of ascertaining this is beset with serious difficulties, inasmuch as, while the calculations as to the quantity of capital even in highly advanced industrial countries where banking habits and facilities have been widely developed are more or less in the nature of guess-work, the wide prevalence of the hoarding habit and the absence of a well-developed banking system in India tend still further to widen the margin of error. It is easy enough to explain the origin of the hoarding habit. Quotations may be given from contemporary writers of the Mughul era, showing that even in those days, India had become what Bernier calls a sink of precious metals. As a subject people with a history of many centuries behind them of insecurity of private property, the people of India have developed the practice of secreting as far as possible such property as they value. Political circumstances are thus accountable for the psychological difference between the people of India and of say, England. In the latter case, the British people have had a proud record of insular security and under favourable environment, they have developed a vigorous spirit of enterprise which has carried them all over the world, and enabled them to invest their savings abroad, to the great advantage of themselves and their mother-country.[1] The social institutions of the country have also been responsible for the growth of the hoarding habit in India. Where the family is the social unit, and all property is held in common, the individual who is anxious to possess something of his own, which he may deal with independently of the other members of the family, finds himself without any liquid asset, and takes to the storing of bullion as the most portable form of property. The dependent position of woman in the Indian social system, under which she is compelled to immure herself within the four walls of her house, deprived of all opportunities to earn anything for herself, has led her to accumulate gold and silver in the shape of ornaments. Again, an Indian family, the income of which is generally uncertain, has often to meet many unexpected calls and social obligations; a birth, a death, or a marriage in the family, or an unexpected crop-failure, or any of the numerous ceremonies enjoined by custom or social practice,—all these mean the spending of money at short notice, and the ryot therefore saves his gold and silver, by pledging or selling which he can easily put himself in funds.

The lines upon which India's foreign trade has developed have also contributed to her growing absorption of the precious metals. Except in abnormal times, she has a favourable balance of trade. which is equated by imports of bullion. "Unfortunately," says Mr. Dalal in his Minority Report already referred to, "India had not been prepared financially for absorbing her favourable trade balances in any other form than the precious metals. Although India is normally a creditor country with trade balances running highly favourable to her, other means of adjusting favourable balances than the precious metals have not been actively sought for....Great Britain as a creditor country set an excellent example of cancelling her favourable balances by investments abroad. There has been no encouragement in India of that method of settling trade balances".[1] It is an open question whether India has more capital than can be profitably invested in the country itself to afford investing abroad; but in the absence of such an arrangement, huge quantities of precious metals are thrown into the country, where a large part of it disappears in the form of numerous small hoards.

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[1] See p. 49, *Report of the Committee Appointed to enquire into Indian Exchange and Currency*, Cmd 527 of 1920; Mr. Dalal's Minority Report.

A special reason for the hoarding of gold may be sought for in the comparatively new form of token currency, not exchangeable into gold, introduced in 1893. Up to the closing of the mints in 1893 to the free coinage of silver, the public had been accustomed for generations to full value coins for their currency purposes; and when the over-valued rupee was introduced into the currency system, they were unwilling to hold their profits and savings in the new coin, but preferred to invest them in gold. In his Note appended to the Report of the Chamberlain Commission, Sir James Begbie points out that the hoarding habit was being gradually weakened under the old currency system, and the cash reserves of the people being attracted into useful and profitable channels, when the mints were closed; and that, in consequence, hoarding was once again largely resorted to, 'indicating a greater and not unnatural desire for solid security than for profitable returns on investments in a currency medium which did not provide the kind of security the people clearly preferred'. And Mr. Hartley Withers had told us that the tendency to hoard gold is not absent even in

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[1] Page 43, para. 20, Cmd. 527 of 1920. See also para. 81 of the Chamberlain Commission Report, Cd. 7236 of 1914, where it is said that private Indian investments in sterling securities would act as a reserve to support exchange.

England, and that 'this prejudice in favour of gold is so ingrained that any attempt to try to hasten the process by which substitutes for gold are used, these substitutes being mere tokens issued by a Government with no promise to pay gold behind them, might have disastrous effects'.[1] The reason for the huge absorption of silver, in 1916-1919, however, was purely temporary. The large purchases of silver by the Governments of India, China and also by the European countries for their subsidiary coinage raised the price of silver to unprecedented heights. The rupee no longer remained a token coin, but on the other hand, its bullion value rose above its face value, with the result that Gresham's Law came into operation, and large amounts disappeared from circulation. Again, the rise of prices necessitated that more money than was usual should be sent out to finance the export trade. The ryots obtained the benefit of the higher prices, but the money did not come back into circulation, since, on account of the rise in prices of the imports as well, they were not willing to buy the imported goods at the new prices but kept their money instead.

Various estimates have been made as to the amount of the hoarded wealth of India,[2] but in view of their highly conjectural nature, it is perhaps not wise to give further currency to them. Some indication as to the amount available for hoarding is afforded by the statistics showing the actual quantities of net imports of gold and silver from 1873 to 1919, published in the Government blue books.[3] From 1909-1910 to 1919-1920, India's net importation of gold was over 34,922,584 ounces, and of silver, over 899,698,141 ounces. The value of the net imports of gold coin and bullion and of silver in these years was as follows:—

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[1] Withers, *The Business of Finance*, p. 61.

[2] Prof. Kale says it is estimated at between 5 and 8 crores. See his *Indian Economics*, 1917 edition, p. 96.

[3] Vide *Statistics of British India*, Vol. ii, Financial, Publication No. 1624 of the Department of Statistics, 1922, pp. 17, also 15 & 16.

Year	Gold	Silver	Percentage of import of treasure to total imports.
1909-10.	Rs. 216,795,000.	Rs. 94,449,000.	19
1910-11.	239,786,000.	86,680,000.	19
1911-12.	377,598,000.	53,371,000.	22
1912-13.	340,012,000.	171,988,000.	22
1913-14.	233,238,000.	130,329,000.	15
1914-15.	76,474,000.	88,715,000.	10
1915-16.	*11,091,000.	48,296,000.	2
1916-17.	132,354,000.	188,001,000.	16
1917-18.	251,786,000.	190,418,000.	20
1918-19.	*55,638,000.	679,190,000.	24
1919-20.	353,303,000.	292,288,000.	

Note :—In the years marked *, there was a surplus export of gold.

The imports of gold for the five years ending March 31, 1914, were the largest in modern times, her average yearly imports during this period coming up to about £ 20 millions, or approximately 20 % of the world's production. It must however be borne in mind that all this vast amount does not disappear in the form of hoards. There are still vast areas in the country to be covered by the circulating media, which has not yet percolated to any degree in many regions; and if the imports of gold came to 20% of the world's production, that did not indicate that India was having anything grossly disproportionate to her natural needs, since the population of the country was then about 19% of the total population of the world. The normal demands of the country for the industrial arts and for the satisfaction of the social customs of the people are estimated to have taken up, in pre-war times, about 10 millions sterling annually. Prof. W. T. Layton says; "Large quantities (of gold) are used by industries of various kinds—the proportion which finds its way into the arts, as compared with the amount used as currency, being dependent on the extent of the demand for gold as material at the current value of gold. It is difficult to ascertain how much of the world's supply is used in industry, for gold is continually transferred from one employment to another. But a recent estimate by the Master of the United States' Mint shows that in 1907 the new material used for industrial purposes throughout the world amounted to about one-third of the world's production in that year. But this estimate has very little basis, and it is largely a matter of conjecture how far the enormous increase in the world's gold supply has had the effect of stimulating gold-using industries."[1] Going by the estimates for what they are worth, we find that the United States were recently reported to be absorbing a million sterling in gold per month for industrial purposes, and that in England, one of the most flourishing trades during the war was that in cheap jewellery, in which form the working classes invested a substantial proportion of their increased earnings. Under these circumstances, to quote the words of Sir Stanley Reed, "it induces a sense of angry injustice to find that the Indian demand for the precious metals for precisely the same purposes is perverted into senseless hoarding, especially when their history and conditions would justify a far larger gold absorption than the Western nations, with their general literacy and highly organised credit systems, can claim."[2]

There is therefore reason to think that the hoarded wealth of India has generally been exaggerated. In this connection, the opinion of the Bengal National Chamber of Commerce may be referred to. So far as the information of the Chamber goes, the ryots in Bengal at least have absolutely no hoard; and whatever silver and gold ornaments they have are not worth taking notice of. The middle classes generally deposit their savings in

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[1] Quoted at pp. 102-103, Datta's *Report on the Enquiry into the Rise of Prices in India, 1914*.

[2] Appendix xxii to the Report of the Babington-Smith Committee, p. 130, Cmd. 529 of 1920.

Post. Office Savings Banks, but the ladies of their families have some silver and gold ornaments. Wealthy people deposit their money in the banks, and their female members have no doubt ornaments made of gold or gold and precious stones. If there had been a hoard, Government would not have to provide money to the ryots on the first sign of famine in order to keep them alive. The Chamber also considers that a large part of the favourable trade balances shown in the statistical returns does not really ever penetrate to the people at all.[1]

Whatever may be the amount that is now lying accumulated in unprofitable hoards, the existence of a properly developed banking system, with numerous branches in the countryside within touch of its possible customers might be supposed to be able to attract to itself a considerable share of this idle capital. But up to the present time, India has not had any adequate banking facilities. A few figures will explain the position. India has an area of 1,802,657 square miles, and a population of 319 millions, of whom only 10.2 per cent. live in towns of 5,000 or over inhabitants. According to the census of 1911, there were 2,253 such towns in the country. Yet, in 1921, only 207 of these towns were served by the banking systems of the country, while the number of banking offices was only 598.[2] The United Kingdom, with a population of 48 millions (1911) had 9138 banking offices in 1917, and Canada with a population of 8,460,000 had about 4,000 banks the same year. The percentages of literacy are also relevant in this connection, inasmuch as confidence is the first condition of successful banking, and mutual distrust is the characteristic of all illiterate races. In India, 94 per cent. of the population are unable to read or write a letter in their own script, as compared with 1.6% in Scotland, 1.8% in

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[1] P. 78, Cmd. 529 of 1920.

[2] See Appendix I, *Statistical Tables relating to Banks in India*, 1921.

England and Wales, 7.7% in the U. S. A. and 17.4% in Ireland.[1]

The organised banking systems of India may be grouped under five classes: the Imperial Bank of India, the Exchange banks, the Indian Joint-stock banks, the Post Office Savings Banks, and the Co-operative banks.

i. For the purposes of the present study, it is not necessary to go into the history of the Presidency Banks, which were amalgamated on the 27th of January 1921 into the Imperial Bank of India.[2] In view of the paucity of banks in India, one of the stipulations made by the Secretary of State in sanctioning the Imperial Bank scheme was that, within five years of its starting, the new bank should open one hundred new branches, of which the Government of India may determine the location of one in four. Prior to the date of amalgamation, the branches and agencies of the three Presidency Banks numbered only 69, including the Colombo branch of the Bank of Madras. Between the 27th of January, 1921, and the 31st of March, 1922, 25 new branches have been opened,[3] the rate of progress in this direction being held in check by the difficulty of getting suitable housing accomodation, and by the paucity of trained men with whom to staff the new branches. A notable feature of the present policy of the Imperial Bank is the encouragement it gives to Indian youths desiring to take up positions in its offices. The following table indicates the growth of private (i. e., omitting Government) deposits in the three Presidency Banks, and in 1921, in the Imperial Bank.

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[1] Statistics of 1911.

[2] Vide Act XLVII of 1920. Mr. James Brunyate's "An Account of the Presidency Banks" gives an account of their early history; while Mr. H. F. Howard's article on the Imperial Bank of India in the Economic Journal of June, 1921 gives a resume of the events that led to its formation. See also Mr. Findlay Shirras's "Indian Finance and Banking".

[3] *Report of the Operations of the Currency Department, 1922*, p. 29.

31st December,	1880	847 lakhs of rupees
	1890.	1,475
	1900.	1,288
	1910.	3,234
	1913.	3,649
	1914.	4,004
	1915.	3,861
	1916.	4,471
	1917.	6,772
	1918.	5,098
	1919.	6,821
	1920.	7,802
	1921.	6,578

ii. Next to the Imperial Bank come the several Exchange Banks, whose activities are mainly confined to the financing of foreign trade at the sea-port towns. The aggregate paid-up capital and reserves of the 17 Exchange banks doing business in India in 1921 amounted to 112 millions sterling, while their cash balances in India only were about £ 24 millions. The deposits in this class of banks rose from £31,035,000 in 1913 to £61,856,000 in 1918, and in 1921 stood at £75,196,000. But such deposits : are almost entirely collected at the sea-ports, mainly at Calcutta and Bombay, and their growth is therefore not very material to the present enquiry.[1]

iii. The Government Blue Book on Banking deals with 65 Indian joint stock banks. These banks have over 300 branches and agencies scattered chiefly throughout the north-west of India, especially in the Punjab and the United Provinces. Many of these, however, are small concerns, 38 of the 65 having a paid-up capital and reserve of less than five lakhs of rupees each. In the few years previous to 1913, there was a remarkable expansion of joint stock banking in North India, particularly in the

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[1] For further details, see Tables 2, 6, and 13; *Statistical Tables relating to Banks in India, 1921*,

Punjab, where owing to the opening of the canal colonies and growth of the export trade in wheat, there was a good deal of accumulated wealth. Several of these new banks were doubtful concerns, controlled by inefficient and short-sighted financiers, but their deposits grew to such an extent that in 1913, it evoked a serious warning from Mr. J. M. Keynes. In his "Indian Currency and Finance"[1] he wrote: "As late as 1900, these banks were comparatively insignificant. Since that time, they have succeeded in attracting so large a volume of deposits as to make them an important part of the banking system of the country. Only six of them date back long enough to remember any real financial crisis in India (for the depression of 1907-8 was not accompanied by the symptoms of financial crisis). Growing up in smooth times, they have thought more of attracting deposits than of retaining cash reserves; and in 1910 we find 16 banks with deposits of £ 17 millions and cash reserves of not quite 11%. Even of these reserves, the greater part is probably held by the older and more established of the banks belonging to this class. In the case of the smaller banks, dealing, as they are, with clients to whom banking is a new thing, and in a country where hoarding is still dominant, the cash balances seem from the available indications to be hopelessly inadequate; and it is hard to doubt that in the next bad times they will go down like ninepins. If such a catastrophe occurs, the damage inflicted on India will be far greater than the direct loss falling on the depositors. The growth of banking habits in India is of course of the utmost importance to the country's economic development. A startling series of failures will do much to retard it." These words proved prophetic, and in 1913-14, nearly sixty banks, with a total paid-up capital of nearly 144 lakhs of rupees, came to grief. In spite of the check which the spread of the banking habit thus experienced, the deposit amounts have shown a steady increase since 1915. The relevant figures are given below:—

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[1] pp. 224-227.

Date	Deposits (in lakhs)
31st Dec. 1880	Rs. 63
1890	271
1900	807
1912	2,726
1913	2,410
1914	1,837
1915	1,879
1916	2,572
1917	3,216
1918	4,215
1919	6,128
1920	7,348
1921	8,016

The rise in the total deposits in all three classes of banks from 1912 to 1921 was by 135%; and of these deposits, the Imperial Bank had 32%, the Exchange banks 33%, and the Indian Joint stock banks 35%. (In the case of the Exchange banks, only the deposits in India are considered.) Cash balances at the end of 1921 were 29% of the liabilities on deposits in the case of the Imperial Bank, 28% in the case of the Exchange banks doing a considerable portion of their trade in India, and 43% in the case of those doing a major portion of their business abroad. The percentage in the case of the Indian joint stock banks was 20% in the case of the larger banks with a capital and reserve of five lakhs and over, and 13% only in the case of the smaller banks. Statistics are not available showing the actual number of depositors in these three classes of banks.

iv. An even more reliable indication of the growth of the banking habit than the deposits in the joint stock banks is the growth of deposits of the Post Office

Savings Banks. The quinquennial average in 1882-3 to 1886-7 of the number of depositors in these banks was 196,000, and of the balance of deposits (inclusive of interest) Rs. 43,377,000. During the succeeding years, there was a very considerable increase, although the Government took steps to prevent it from becoming inconveniently rapid. For this purpose, in 1889-90 the maximum amount receivable was reduced from Rs. 3,000 to Rs. 2,000, and in 1894-95, the rate of interest was reduced from three and three-fourths per cent. to three and one-eighth per cent. in correspondence with the reduction in the rate of interest on Government securities. Yet, in 1889-1900 the number of depositors had increased to 786,000 and the balance of deposits to Rs. 96,464,000. Thenceforward, both the number of depositors and the amount deposited increased steadily up to 1913-14, when the former figure stood at 1,639,000 and the amount deposited had risen to Rs. 231,675,000. On the 1st April 1914, the maximum amount receivable on deposit was raised to Rs. 5,000, but the outbreak of the war prevented the increase that would otherwise have followed this alteration. In 1914-15 the balance of deposits fell to Rs. 148,926,000 but the withdrawal tendency was soon arrested, and in 1919-20, there were as depositors 1,760,000 persons, and the balance of deposits with interest was Rs. 213,485,000. The average balance per depositor was Rs. 123 in 1899-1900, Rs. 127 in 1904-5, Rs. 91 in 1914-15 and Rs. 121 in 1919-20.

v. The development of co-operative societies, with their arrangements for taking deposits from members, is also having its effect on the mental attitude of the people. The movement, which was started in India only in 1904, is yet in its infancy and the figures that follow are important, not as representing any marvellous achievement, but as indicative of the scope that co-operation offers for attracting the idle hoard of the peasant and making it available for productive purposes.

	average of 4 yrs 1906-7 to 09 10	average of 5 yrs 1910-11 to 14-15	1915-16	1916-17	1917-18	1918·19	1919·20
No. of members of primary socs.	161,910.	548,253.	865,053	960,960	1,617,764.	1,235,891.	1,521,148.
Loans and deposits from members, in thousands of rupees.	1,412	8828	6367	7901	8941	10895	13702
Total working capital, in thousands of rupees	6812	54842	103267	122292	141094	175514	214071

The above figures, which show the amount of deposits in all the five kinds of banks we have considered, are in some degree misleading. In the first place, it is necessary to remember that an increase in banking deposits, or in the number of cheques passing through the clearing house, does not necessarily connote a corresponding increase in banking habits. The financial policy of the period 1914-1918, the expansion of the currency note circulation and the creation of credit have led to an increase of the volume of money in the principal money markets of India. And not only has the volume of money increased, but also its velocity. "Nothing is more remarkable during the past few years than the way in which the unprecedentedly large Government disbursements have returned to the banks in the principal money markets, there to be caught again in the wheel of credit, with the consequence that the enormous seasonal fluctuations of money hitherto characteristic of Indian money markets (money unobtainable at 9% or over in the busy season, and unlendable at 3% in the slack season) have to a large extent been flattened out". But this activity has been mainly confined to the larger business centres of the country, and has left the bulk of the people unaffected; so that it would not be safe to infer from the increase of deposits that the people at large are increasingly taking to the banking habit. A second point to bear in mind in drawing any conclusions from the available banking figures is that they do not by any means correctly indicate the entire banking position in the country, inasmuch as they leave out of account the indigenous banking system, under which the Shroffs, Mahajans and Chetties in the course of their business of financing the internal trade of the country receive deposits from their clients. The depositors in such cases do not usually receive any cheque book, but place their money for a certain fixed term, at the end of which they either renew the period or else take payment together with the interest agreed upon. The amounts thus lodged with the native bankers must be in the aggregate considerable, though there are absolutely no means of ascertaining how much they come to, since the bankers themselves are most reluctant to furnish the necessary information in the fear that such information would be used against them for income tax purposes.

In spite of these limitations to the inferences to be drawn from banking statistics, it is fairly clear that, the inadequate development of the banking system notwithstanding, an increasing flow of deposits is being attracted, a considerable part of which ought to be available for investment in industries. How far an extension of banking facilities will draw out the money now lying idle, it is difficult to judge with any degree of accuracy; but that the response will materially alter the present situation, there appears to be no room to doubt. The rise of prices of agricultural produce in recent times has brought about a growth in savings, a large part of which would find their way into banks, if they could get into touch with the people. A witness before the Babington-Smith Committee has thus summarised the situation: "Where a man had Rs. 50 before, he has Rs. 500 now. It was quite easy for him to keep his Rs. 50 in his house, but it is very difficult for him to keep his Rs. 500 in the same conditions. I believe that there is scope for an extension of banking facilities far beyond what even the most optimistic of us imagine....The Chief Minister of one of the important cotton states in India told me he could take me in his small capital town into a score of houses, in not one of which would there be less than two thousand to three thousand coined rupees. There is in that town absolutely no bank, no credit institution of any kind...In a single cotton district in the Bombay Presidency, in 1917, an additional four crores of rupees was moved in in order to finance the cotton crops, and in that district there was no branch of a bank. Much of this large mass of inert currency must come out if proper banking facilities are given for its deposit."[1]

If the idle capital of India is concentrated and mobilised in the manner here contemplated, does it follow that it will therefore become available for investment in industrial enterprises? It will increase the currency in circulation, and the banks will have more money than at present to loan out. But that in itself will not lead to a direct participation of the people in industrial concerns. The conservatism of Indian capital, its preference for safety rather than for profits, have often come in for comment. "Indian capital", said Sir Rajendranath Mukerjee, in the course of his Presidential Address to the Indian Industrial Conference of 1910, "is proverbially shy and unenterprising, but this I ascribe largely to a want of industrial and commercial knowledge on the part of Indian capitalists, and their consequent failure to realise the potentialities of the various schemes placed before them, coupled with a disinclination to depart from those time-honoured methods of investing and lending money, which have been in force for many centuries, and in many instances, bring in a return which can only be considered as usury. India generally speaking is a poor country, that is to say, the majority of the population are poor. But there is wealth in India, and the possessors of it could, with but a fractional part of their amassed wealth, not only develop many of the industries that are dormant today, but make India industrially equal to any other country in the world." Habit plays a large part in the psychology of the investor, and in the same way as the Englishman prefers to invest abroad, and the Frenchman to invest in his Government loans, the Indian capitalist prefers to follow his ancestral tradition of rural trade and the financing of agriculture, where the profits are large and certain and to leave industries to be taken up by foreigners, or else to remain undeveloped. And he is not to blame: modern industries require technical knowledge, which he did not possess; and the prospects of profit in a new concern always seem doubtful. When an industry has already established itself as a certain source of profit, there money was sure to flow in in abundance, and in many cases to such an extent as to seriously depress the industry. In my own country, tile factories in recent times have proved commercially successful; the profits secured by the pioneers excited the cupidity of others less venturesome, but not less ready to follow a lead, and today there are many tile companies either already floated or in the process of flotation, and there is a general fear, not unjustified by the present position of the tile industry of the country, that a period of depression is coming on. The cotton mill industry is also a case in point; but here the market is so large that for a long time to come, there is no reason to fear that fresh accretions of capital may lead to over-production and glut. The few major industries of the country have profited by the conservatism of the investor; but too close an adherence to this policy of abundant caution has led to the confinement of industry within narrow and restricted bounds, and various important minor industries with rich and extensive prospects before them, the establishment of which, in some cases, is vitally necessary to make India a self-contained economic unit, have been grossly neglected. It has in particular led to the present helpless position of the small entrepreneur, who represents the most numerous class of manufacturing producers in the country, and driven him into the toils of the usurious Bania."[1]

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[1] Cmd. 528 of 1920, Q. 4217.

It is on account of this characteristic of the Indian investor that foreign capital has come to dominate the industrial situation in the country. The total amount of capital invested in India in 1917-18 was estimated approximately at £570 millions, out of which 81% represented capital outlay, debts and loans, and 19% the paid-up capital of joint-stock companies. The capital invested in industries is confined mainly to the cotton, jute and woollen mills and to mining, and covers 6% of the total.[2] Of the total capital investment, by far the greater part represents British capital. No accurate information relating to foreign capital in India is available though various estimates have often been made. In 1909 it was calculated that British capital in India was in the neighbourhood of £470 millions.[3] Sir George Paish has discussed the subject at length in two papers read before the Royal Statistical Society in 1909 and 1910, and according to him, India and Ceylon took about £365,399,000, or more than one-tenth of Great Britain's investments abroad. Yet another estimate is that of Mr. H. F. Howard,[1] who puts India's share at £450 millions. The principal heads of investment according to Paish and Howard are set out in tabular form below In his oral evidence before the Committee on Indian Exchange and Currency of 1919, the late Sir Lionel Abraham mentioned £400 millions as the probable figure, of which sterling loans came to about £160 millions, the capital value of railway annuities to about £70 millions, and the rest was taken up by the capital of Indian railway companies as well as their debenture stock and bonds, and by the capital of the various British companies, principally tea and jute, working in India.[2] The whole enquiry is beset with great uncertainty, but it is fairly clear that the total volume of foreign capital in India is very great, and that a considerable part of it is invested in Indian industries.

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[1] See cmd. 51 of 1919, pp. 46 47, 176 et seq., etc.

[2] G. Findlay Shirras, *Indian Finance and Banking*, 1919, p. 392.

[3] See the article "Our Investments Abroad", pp. 375-377, Economist, 20th February, 1909.

Foreign Investments in India.

Sir George Paish (India and Ceylon together) (in thousands)		Mr. H. F. Howard (India alone) (in millions)	
Government	£178,995	I. Government loans:—	
Municipal	3,522	India sterling stock ..	£170
Railways	136,519	Enfaced rupee paper held in London	9
Banks	3,400	Approx. quantity of rupee paper held in India by Europeans	31
Commercial and Industrial	2,467	II. Railway Annuities .	73
Electric lighting and power	1,763	III. Loans of Local Bodies, taking the foreign share at less than 3/10 of the whole ..	10

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[1] Chapter V, "India and the Gold Standard," 1911.

[2] Vide cmd. 528 of 1920, p. 292, Qs. 5341 and 5342.

Financial, land, and investment	1,853	IV. Companies registered in India, taking the foreign share at less than 1/2 of the whole ..	20
Gas and water	659	V. Companies with sterling capital carrying on business more or less exclusively in India:—	
Iron, coal and steel ..	803		
Mines..	3,531		
Motor traction and manufacturing	90	Railway Companies ..	77
		Tea companies.. ..	13.5
Oil	3,184	Other companies ..	20.5
Rubber	4,610	VI. Banking, loan insurance, etc. say	26
Tea and coffee	19,644		
Telegraphs and telephones..	43		
Tramways	2,136		
TOTALS:—	£355.399,000		£450,000,000.

The large share taken by British capital in the economic development of India has given rise to serious misgivings in the minds of Indian publicists. At the end of 1919-20, the statistics available show that there were 634 companies incorporated outside India carrying on their work in the country. Their paid-up capital amounted to £420,633,000, while the debentures issued came to £102,730,000.[1] Of this amount, railways represented £35,444,000 of the paid-up capital and £41,907,000 of debentures. The sterling capital in the tea industry came to £17,990,000; in jute mills to £2,394,000; and in the South Indian gold mines to £2,085,000. In determining the effects of foreign capital on Indian economic development, it is necessary to make a distinction between capital loaned out by Indians, as in the case of the railways, and that employed in India by the foreigner directly. In the former case, the benefits derived by India are obvious. The great sums borrowed from the London money market for railways and irrigation, for example, have been obtained at exceptionally low rates of interest; and the interest charges are now quite negligible when taking into account the remarkable increase in the wealth of the country which these public works have brought about. But when we turn to the industries which have been built up in India by the direct employment of British capital, we come upon a less favourable aspect of the question. It must at once be conceded that but for the direct enterprise of the British capitalist, many of the large industries of India—the jute mills, the tea gardens, gold and coal mining, the leather industry—would not have shown such a speedy and marvellous development as they do now. But these very instances stand for what is now-a-days called economic penetration; and the only advantage that, in strict monetary measure, India has received from this kind of foreign investment is the wages received by the Indian coolies for their bodily labor.[1] In the mining industries, particularly, the loss India suffers through the foreign exploitation of her mineral resources has provoked serious warnings from both scientists and economists. Sir Thomas Holland once told the Royal Society of Arts that, taking the Indian manganese industry as an example, the whole output of 1892-1911, about 4.5 million tons of high grade ore, was exported, thus contributing to the economic development of other countries, while India received as compensation only a small fraction of the market value of the minerals. (In this case, the ore must have brought about 8 millions sterling in the European market, but the Indian Government and the Native States obtained only their royalty of about £56,000, while another portion of the estimated value was spent on labor and transport in India.)[2] So keenly is this loss felt in the country that there are not wanting men who advocate that it is better that no mining be undertaken in India till the indigenous concerns are able to take on the entire work than that the industry should be run as now by foreign capitalists. (Thackersey, Mudholker, etc.)

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[1] See table 50, *Statistics of British India*, Vol. i, 1922 edition.

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[1] Vide Kale, *Indian Industrial and Economic Problems*, 2nd edition, pp. 1-56.

[2] Vide the Journal of the Royal Society of Arts, 1911, pp. 629-652.

In thus noticing the evils of the direct application of foreign capital to Indian industries, the valuable lessons that it has taught us should not be overlooked. They have in many instances taken the risks of pioneering new industries, and that in spite of many difficulties, such as those of the climate, the distance and the want of exact knowledge of the country in the earlier periods. The natural disinclination to risk such investments, induced by these deterrent circumstances, must have been rather increased than diminished by the system of giving a guarantee of interest at a high rate on the large capital of the great railways, since it was a tacit recognition by the Government of the risky nature of private enterprise in India. So long, therefore, as the opportunity was afforded to capitalists to make advantageous investments on a large scale on the security of the State, the inducement to attempt any enterprise without such security must have been greatly diminished.[1] Yet, the British capitalist dared to take the risks, and it is no use now to grumble if today he is enjoying the fruit of his labors. If today there is a strong volume of opinion in favor of a rapid policy of industrialisation in India, this is in some measure at least due to the object lesson set by the achievements of the British pioneer. Besides, "it is the foreign capitalist who imports into the country the technical knowledge and the organisation which are needed to give an impetus to industrial development. It is to him that we must look largely at first for the introduction of new industries and for instruction in the economies of mass production. By admitting foreign capital freely, India admits the most up-to-date methods and the newest ideas; and she benefits by adopting those methods and assimilating those ideas. If she tried to exclude them, the policy of industrialisation which we contemplate could with difficulty be brought to a really successful pitch." The Indian Fiscal commissioners therefore hold that the free utilisation of foreign capital and foreign resources would be an advantage to India. They have not, however, differentiated between the indirect and the direct employment of foreign capital. A fundamental principle of the Indian scheme of industrialisation is that the profits of the industry should as far as possible remain in the country; and this could be accomplished only if, instead of encouraging the direct investment of foreign capital, we adopt a policy of loaning out foreign capital, whenever needed, so that the only external call on the profits will be the charges on account of interest.[2]

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[1] Famine Commission Report, Vol. i., c. 2591 of 1880, p. 175.

We may now consider the attitude of Indian capital towards industries. The growth of the joint-stock movement in India furnishes the best criterion for arriving at a judgment on this point. Of the total capital investment in the country in 1917-18, as has been pointed out elsewhere, only 19% represented the paid-up capital of joint stock companies.[3] Nevertheless the history of the joint stock movement is one of steady progress. In 1895-96, there were only 1309 companies at work, with an authorised capital of Rs. 416,189,114 and a paid-up capital of Rs. 291,147,434; by the end of 1920, they had

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[1] Report of the Indian Fiscal Commission, cmd. 1764 of 1922, p. 158.

[2] Cf. Dr. Slater's remarks at pp. 272-274, the Asiatic Review, April, 1923.

[3] For an estimate of capital investments in India, see pp. 851 et seq. Indian Industrial Commission, Evidence, Volume ii, Cmd. 235 of 1919

increased to 3,668 with an authorised capital of Rs. 8,482,259,476 and a paid-up capital of Rs. 1,232,135,739. The actual progress from year to year is shown in the table appended elsewhere.[1] The statement below shows the distribution of the aggregate capital in the principal classes of joint stock enterprise at the end of 1919-20:—

Class of Cos.	No. of cos.	Anthorised capital (In units of 1,000 Rs.)	Paid-up capital (In units of 1,000 Rs.)
Banking and Loan	556	940,337	93,506
Insurance	98	745.591	8,275
Navigation	31	399,390	14,988
Rlys. and Tramways	52	164,190	136,800
Other trading Cos.	1,346	1,238,084	238,202
Cotton mills	247	513,898	197,982
Jute mills	55	193,646	116,526
Mills for wool, silk, hemp, etc.	21	75,675	12,351
Cotton and jute screws and presses	141	56,450	26,783
Rice mills	36	34,536	12,232
Flour mills	35	14,000	7,410
Other mills and presses	84	76,781	21,471
Tea planting companies	385	123,791	68,198
Other planting companies	56	33.926	9,228
Coal mining	232	139,202	74.090
Gold mining	6	2,458	1,784
Other mining and quarry Cos	98	415,605	75,492
Land and building	58	134,098	36,406
Sugar manufacturing	24	21,408	8,735
Other companies	107	159,093	26,677

About one-third (Rs. 3,948 lakhs) of the aggregate paid-up capital was invested in mills and presses, chiefly for working or pressing cotton, jute, wool, and silk. A great number of the mills and presses were registered in Bombay, which appropriated nearly 44% (Rs. 1,748 lakhs) of the total, mostly in cotton mills and presses. Mills and presses, mainly jute, registered in Bengal had over four-fifths of the capital invested in mills and presses in Bombay. In tea, coffee and other plantations, a paid-up capital of Rs. 774 lakhs was invested, and of this amount 656 lakhs were held in Bengal. The capital of mining and quarrying companies was Rs. 1,514 lakhs, of which 55% (835 lakhs) was in Bengal, mostly in coal mines.

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[1] See p. 268.

The total value of debenture capital at the end of June, 1920 was Rs. 1,267 lakhs and of this amount, 583 lakhs belonged to Bengal, 569 to Bombay, 27 to Madras, and 18 to the United Provinces. The cotton mills had debentures for £99,000 in sterling and Rs. 34,229,472 in silver (at the end of 1919-20), the jute mills £71,358 and Rs. 31,485,400 and the paper mills Rs. 2,200,000 (31st December, 1919).

The year 1919-20 saw a great boom in company promotion, both in new enterprises and in the conversion of established concerns into limited companies. The principal cause for this sudden commercial and industrial activity was the buoyancy of hope induced by the cessation of the unsettled conditions of the war-period, and also by the accumulation of the large profits made during the same period. The practical closing of the foreign markets, either through the shortage in shipping or the prohibition to trade with the enemy countries gave a powerful stimulus to Indian businesses, and but for the Indian Companies Restriction Act XII of 1918, the trade boom would have certainly commenced earlier. The repeal of the above Act with effect from the 24th September 1919, proved the signal for fresh flotations on an unprecedented scale. The following statement shows the trend of company registration in the post-war period:

Post-war Company Flotations.

Year Cos.	No. of Regd	Relatives.	Aggregate Authorised Capital	Relatives.	Average Authorised capital per company.
1913-14	356	100	Rs. 669,153,000	100	Rs. 1,879,000
1918-19	290	81	212,755,000	32	734,000
1919-20	948	266	2,817,612,000	421	2,972,000
1920-21	1022	287	1,471,793,000	220	1,440,000
1921-22	719	202	795,414,000	119	1,106,000

A noticeable feature in the registration of 1919-20 was a great increase in the average authorised capital of the new companies as compared with that of the older ones. This was due partly to the fall in the purchasing power of the rupee, partly to the ease with which subscriptions were available in the market, and partly also to the feeling that many of the older companies on the register were very much undercapitalised.[1] Among a credulous public who have not yet learnt to distinguish between authorised and paid-up capital, such flotations are likely to do mischief, especially when engineered by unscrupulous promoters who clear out of the concern the moment it is successfully launched, and take no pains to see that it is efficiently managed. Yet, out of the 948 flotations of the year 1919-20, no less than 334 had each an authorised capital of ten lakhs and over.

Describing conditions in India at the close of the war, H. M. Trade Commissioner wrote in 1919: "One of the most encouraging features of the past few years has been the readiness of Indian capital to subscribe to new industrial ventures provided that there is confidence in the names of the promoters and managing agents. There is at the present moment a decided industrial boom in India. Almost every flotation is heavily oversubscribed, and the shares advance to a substantial premium at once. Not only is this the case with the smaller concerns, but very large amounts are subscribed rapidly. For instance, at a recent meeting of the directors of the largest industrial group in the country, it was decided to increase the capital by issuing nearly five million pounds worth of preference shares. In a few minutes this sum had been promised by directors sitting round the table, and was subsequently entirely subscribed by Parsee and Indian investors. The Marwari speculator in Calcutta has made very large sums during the last few years, particularly in jute mill shares which rose steadily during the war without a set back. He has therefore gained confidence in "Industrials". Unfortunately, however, he is a speculator rather than an investor, and there is some danger that the present industrial boom may end in too great an inflation of prices, with the natural consequence of loss of confidence and a slump, which will damage even those companies which are on the soundest foundations."[1]

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[1] On this latter point, the present writer made some inquiries, but was informed by the Commercial Intelligence Department of India (Vide their letter No. 1367 S. A. dated 15-2-1923) that the information at present available does not furnish sufficient data to determine whether the Indian concerns are under-or over-capitalised.

The depression that followed the boom saw a drastic weeding out of many of the mush-room companies. The quotations of 1919 and 1920 fell from their absurd levels, (see table next page) and the liquidations in 1921-22 included 254 joint stock companies with an authorised capital of 2,536 lakhs. No less than 6 crores represented life, fire and marine insurance companies, the striking contrast between the authorised and paid-up capital of which is noticeable from the table at p. 247; and two and a half crores represented navigation companies. These were mostly the boom flotations of Bombay; the notoriously speculative character of the place led it to contribute 15 out of the 25 crores of authorised capital of the companies which went down in 1921-22. But joint stock companies are not the only business concerns in India; there are numerous private concerns, and the number of these which failed during the period was considerable. By the middle of 1921, the boom had spent itself out, leaving a slough of depression; and in 1921-22, as the figures show, the fresh registrations decreased by about

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[1] *Report on the Conditions and Prospects of British Trade in India at the close of the War*, cmd. 442 of 1919, p. 110.

30% and the authorised capital by about 46 % as compared with the previous year.

TABLE SHOWING VARIATIONS IN THE PRICES OF SHARES AND SECURITIER (IN RELATIVES)

DESCRIPTION OF SHARES.	29-7-14	26-3-18	27-3-19	31-3-20	22-3-21
5 Govt. securities ..	100	67	74	62	59
96 Port Trust & Municipal debentures ..	100	84	83	82	80
8 banks	100	111	114	132	116
32 jute mills, ordinary,	100	467	383	562	372
61 cotton mills, ordinary	100	161	157	388	318*
76 coal companies, ordinary	100	133	157	147	150
85 tea companies, ordinary	100	125	124	135	94
4 flour mills ..	100	206	238	406	388
1 Tata iron & steel, ordinary ..	100	295	284	207	132

* On April 5, 1921

In spite of this temporary setback, it may confidently be expected that the habit of investing in industial undertakings will grow apace, not only because of the spirit of patriotism that is now behind it, but also on account of the additional vigour that has been imparted to the industrial movement by the recommendations of the Indian Industrial and Fiscal Commissions, and the definite acceptance by the Government of the principle of actively stimulating industrial and productive effort of all kinds. The last few years have witnessed an extraordinary outburst of industrial activity, seeking avenues which have heretofore been unexplored. Among the ventures that have already been successfully launched are the iron and steel-industries of Kulti, Jamshedpur, Alansol and Manoharpur, the hydro-electric installations of Mysore, Kashmir, and the Western Ghats, and schemes for an extended use of electric power in a number of large towns. The subsidiary industries which are springing up in the iron and coal area of Bengal and

Bihar have already been referred to elsewhere; and several other schemes for large scale production have either been fully worked out and financed, or else being investigated by powerful interests. The leading mercantile and industrial houses of India whose principal watchword has been caution in the undertaking of new lines of departure[1] have also been drawn into this vortex of industrial activity, and the success they have achieved as a result of their careful preliminary investigations has encouraged others to similar efforts. The financing of these large concerns, which have at their back financial geniuses in close touch with the home and foreign money market, has not perhaps been a difficult matter. But financial genius is rare in India, and the manager of a smaller firm requiring, say, additional capital for development at present occupies a position of peculiar difficulty. And he is the representative of the most numerous class of industrialists in the country.

The existing banking organisation of India is insufficiently developed even for the financing of trade; in financing industry, therefore, where the period of turnover of capital is longer, existing banks are of but little help. In the case of the Presidency Banks, the law prevented them from underwriting industrial capital or from investing in, or lending on the security of shares in industrial concerns,[2] and from locking up their money in loans or advances for a longer period than six months, and from lending money except on the security of two names. This position is not altered by the Imperial Bank of India Act, (47 of 1920) which recognises shares and debentures of companies only as collateral security, and that only under certain conditions, and leaves untouched the other conditions.[3] The Exchange Banks have as much as they can do in the financing of the foreign trade, without devoting their funds to long-term loans in industrial ventures. There remain the Indian joint stock banks, which are fettered by no such restrictions as the Imperial Bank, which may do a great deal to further industrial development. As at present organised, they suffer from grave defects, and a perusal of the Liquidators' reports on the Peoples' Bank, the Indian Specie Bank, the Credit Bank of India, the Industrial Bank and the Hindustan Bank[1] together with the present proportion of cash balances to deposits (which was only 13% in the case of the banks with less than 5 lakhs of capital and reserves) leaves room for the suspicion that the evils which led to the debacle of 1914 have not been removed.

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[1] See cmd. 51 of 1919, p. 13; also cmd. 442 of 1919.

[2] See sections 36 and 37, Presidency Banks (Amendment) Act, I of 1907.

[3] See Schedule to the Act, Parts I and II.

The part that a soundly developed system of banking can play in the industrial development of a country is illustrated by the history and practice of the Industrial Banks of Germany, and in the East, of Japan.[2] The British Joint Stock Banks have not undertaken, and indeed are not fitted, from the nature both of their liabilities and of their management, to undertake the task which the German banks have shouldered; and banking and industry have not been so closely associated together in England for the reason, among others, that the imperative necessity which has led to such a co-operation in other countries was largely absent in this country. From its very infancy, British industry grow wealthy and powerful, and depended largely on its own resources, to such an extent indeed that the export of capital through the principal financial agencies has always been disproportionately large when compared with the amounts invested through the same agencies in British industries. In 1913, the public issues of capital as shown in the Times volume of prospectuses amounted to over £229 millions, of which only about £13.5 millions was devoted to British industry; in 1912, according to one estimate, out of £191 millions of new issues, only 17.5 millions represented home issues. The financing of British industry has been mainly of a local and private nature, and the great issuing houses of London have been more closely in touch with foreign countries than with the industrial concerns of their own country. The consequence was that it was open to foreign financiers to take up unlimited funds in the London short-loan market and finance the industries of their own or other countries, an advantage of which the German banks made the amplest use. This divorce of English banking from industries is in marked contrast to the practice of German banking. "One difference," said a German bank director to the American Monetary Commission, "between the banks of England and of Germany is that in England, the primary purpose of the banks seems to be to secure large earnings for their shareholders. In Germany, our banks are largely responsible for the Empire, having fostered and built up its industries." The English view-point is summed up in a dictum of the late Mr. Pownall (President of the Institute of Bankers) that 'a banker ought never to be a partner'. That is exactly what the German banker is. In 1911, we are told, the Deutsche Bank was represented on 134 different Directorates, managing, to name a few of their activities, mining, smelting and salt works, metal working companies, stone and earth works, engineering and machine companies, chemical works, oil and gas companies, textile and paper mills, rubber factories, water works, building societies, food-producing companies, and transportion and public utility companies. The Disconto Bank was similarly represented on 114 boards, and the Dresdner on 112. Their all pervading influence is thus described by Mr. W. R. Lawson: "The men who direct the German banks are all the time in close touch with the iron and coal industries, the manufacturing and trading classes, and the ocean steam lines. With them, finance, industry and transportation go hand in hand, and are regarded as integral parts of the same problem..... The German banker has a finger in everything that is going on. He is represented directly or indirectly on the boards of manufacturing, trading, shipping and mining companies. He has his eye on all the staple markets. The Bourse in an essential part of his domain. Underwriting is one of his recognised functions, and Germany is thereby spared many of the scandals of British company-promoting."[1]

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[1] For extracts from these reports, see Appendix viii to the Memorandum on Banking submitted to the Indian Industrial Commission, Evidence Volume V. Cmd. 238 of 1919, pp. 826-27.

[2] For an interesting comparison between the English and German banking systems in relation to trade and industry see the Quarterly Review, October, 1916, pp. 532 et seq.

The lessons of German industrial banking are of special interest to India, inasmuch as Germany at the commencement of her industrial career found herself faced with conditions almost identical with those India is facing today. When the importance of industrialisation was recognised by Germany, other countries, especially Great Britain, had already made remarkable progress with their industries. She was poor, and a developed banking system was practically non-existent. It was therefore imperative that all the capital available, whatever it was, should be concentrated and mobilised for ready use. In order to grow in the face of foreign competition, Germany availed herself of every weapon she could think of—tariffs, Government aid by bounties, favourable export rates in transportation, and lastly the organised aid of banking. Further, German banking and industry started practically simultaneously, and grew up together in close co-operation. Even from the very starting of the Grossbanken in the middle of the last century, they had adopted the active promotion of industrial enterprises as one of their main functions and the reason for this intimate partnership was brought about by the prevailing economic conditions of those days. Similar historical environments in Japan account for the way in which banking and industry have grown up in close connection in that country. Special banks of deposit, not directly participating in industry, were not possible at this period owing to the scanty means of the population. As industry itself was too poor to maintain and develop itself, as in Great Britain, the banks were the only reservoirs from which the capital and credit needed could be drawn. The strength to which the eight Grossbanken attained at the outbreak of the war may be measured by the fact that, with their associated banks, (but excluding the Reichsbank) they possessed a total capital of no less than £ 132 millions, while the whole banking capital of the United Kingdom, (excluding that of the Bank of England) was only £ 120 millions, and that of India (including the total capital and reserves of the Exchange banks, as their Indian portion cannot be estimated) only £ 460, 000.

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[1] Bankers Magazine, July, 1906.

It is not possible within the limits we have set to ourselves to attempt a description of the methods by which the German banks assist industry. But one aspect of the relations between banking and industry deserves special consideration. Besides underwriting issues and placing loans, they also float new companies, either by themselves or by inviting subscriptions. Issues which have behind them the backing of such powerful financial interests are more readily taken up in the market than otherwise, and new enterprises are thus launched under favourable auspices. They also regulate the price of shares in concerns in which they are interested by buying them when they are unduly at a discount, or selling them whem they appear unduly high. Again, the elimination of the private company promoter, to whom a successful flotation is of more importance than a sound venture, has been one of the merits of the German system of financing industry. "Company promoters do not exist in Germany, and in England, they have as a body done great harm by their action as intermediaries in converting private concerns into public companies. The Company Promoter exists to induce the public to take shares in a private concern which he is turning into a limited liability company, and as a rule, his personal interest is to inflate the issued capital of the new concern to his own personal profit, without regard to its future welfare. This is a serious public evil, and demands a remedy. Shall we prohibit the company promoter, and in any substituted system, provide that flotations of new companies shall be made only by responsible bodies who have an interest in the continued prosperity of the companies they put on the market?"[1] Under the German system, a body of industrial experts and highly trained business men has taken over the functions of the private promoter—people who are able to give the most intelligent examination to all schemes put before them, and who insist before they accept any new proposition that they shall have a controlling interest in the new flotation so that they may be enabled to see that, besides the supply of capital resources, the new company also gets skilled technical and scientific assistance and proper business management. The banks as issuing houses are therefore able to accept responsibility to the subscribing public as to the future of their concerns. The German banking system has been the general staff of German industry, and had it not been for this combination between the financier and the captain of industry, Germany would not have attained its high level of business efficiency and its successful industrial leadership.

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[1] Inaugural Address of Mr. G. H. Pownall to the Institute of Bankers, Nov. 8, 1916.

The methods of the Japanese banking system also should serve as an object lesson to India. Like the Germans, the Japanese also borrowed the idea from the Credit Mobilier of Paris. We may take the Nippon Kogyo Ginko, founded in the early years of the present century, as a specimen. The bank is under the control of the Government, which holds a considerable portion of the share capital and appoints the directors; and its business includes, among other things, advances on the security of shares of companies; subscriptions for, or taking up, debentures of companies; the business of a trust company; advances or loans on the mortgage of railways, factories and mines; and the purchase of companies' debentures and shares, etc., with money lying idle in the course of business. The by-laws of this bank, which require Government sanction, forbid the loan of an amount exceeding half of its paid-up capital on urban land or industrial buildings; its debentures may not exceed the value of certain securities held by it, or be more than ten times its paid-up capital; and the bank must not give loans for longer periods than five years. This bank, it may be mentioned, is the youngest of the six special banks which figure so largely in the recent economic development of the country. There is thus in Japan a considerable degree of State support and control in the case of banks which are designed to assist commerce and industry.

The place of industrial banks in industry and their sphere of usefulness have attracted considerable attention in India in recent times,[1] especially because it is being realised that 'the difficulty in raising capital for industries is mainly the measure, even in India, not of the insufficiency or inaccessibility of money, but of the opinion which its possessors hold of the industrial propositions put before them'. Along with the supply of financial assistance, therefore, must be called into being an agency which can see to its proper application. The need can be met by a judicious adaptation of the German system. It is indeed true that there are today eight principal industrial banks working in India. Those are (1) the Calcutta Industrial Bank, (2) the Industrial Bank of Western India, (3) Karnani Industrial Bank, (4) the Mysore Industrial Bank, (5) Tata Industrial Bank, (6) the Indian Industrial Bank, (7) the Industrial and Exchange Bank of India, and (8) the Simla Banking and Industrial Company, with a total authorised capital of Rs. 4,075 lakhs and a paid-up capital of Rs. 421 lakhs; but even if all their capital resources are devoted to the financing of industry, it would not meet more than a small franction of the day's requirements. As a matter of fact, however, these banks combine ordinary banking, and in some cases exchange business, with proper industrial banking,—a mixing up of functions which portends calamities. The German banks have been criticised for their permanent assumption of large risks on the basis of their deposits. Dr. Riesser has pointed out how in spite of the flourishing conditions of German industry, the proportion of liquid assets to liabilities was constantly dwindling, till from 85% in 1893, when, acting under a warning from the Government, (so it is believed) they began a slow reversion of policy by which, where the deposit business came to the front, the flotation and issue business was slowly relegated to the background,[1] and in order to avoid direct participation, resorted more largely to the creation of trust and finance companies. It was the transgression of this fundamental principle of banking policy that was responsible for the Indian failures of 1914; and industrial banks would therefore do well to use only share and debenture capital and long-term loans for industrial finance, and not to tie up short term deposits in that part of their business.

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[1] See the *Times of India* "Industrial Banks—Their Place in Industry and Their Sphere of Usefulness", 1st and 3rd December, 1917.

In considering the nature of the industrial banks that may be profitably started in India, the Industrial Commission says: "What is required, then, is a bank that can keep in touch with small industrialists, is able to estimate the prospects of a fairly extensive range of industries, and possesses funds which it can afford to lock up for a time in securities not readily realisable. A bank that is so equipped will often be able, even if it has in the last resort to take over a factory, to avoid much of the loss which such a course would usually entail on an ordinary bank. It is clear that a limit will have to be placed on the amount advanced on security of this kind, and this should be fixed with special care in the case of money advanced towards initial capital. Plant has in some cases a sale value which can be estimated with a considerable degree of certainty; it then constitutes a fairly liquid asset. "We are of opinion, therefore, that an industrial bank should possess a paid-up share or debenture capital high in proportion to its total business; it should observe the usual precautions in not allowing too large a share of its funds to be used for the benefit of any single interest or group of financially interdependent interests; its loans on plant, buildings and land should be carefully considered and should be limited in each case; the larger proportion of its industrial business should be confined to the provision of working capital; it should provide initial capital with caution, at any rate during its opening years, and should not itself at first attempt to float companies, though it may advise and assist in other ways persons who propose to do so. The main factor of safety in an industrial bank is the judicious limitation of each class of business to its proper proportions".[1]

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[1] Riesser's "Die Deutschen Grossbanken und ihre Konzentration", quoted in the 'Round Table', December, 1916.

In the absence of the specialised business opinion and expert advice which, as we have seen, are of the very essence of a successful system of industrial banking, it is to be feared that India will have to wait for some time before the problem of industrial finance may be left to such banks. Meanwhile, what provision is there for the current financing of industry? It is possible that the low productive capacity and the consequent poverty of the average Indian do not leave much scope for saving and investment. It has also been brought out in the course of this discussion that the existence of a hoard properly so called, which can under any imaginable circumstance be utilised for industrial investment, is highly conjectural; taking it at its highest estimate, it does not exceed Rs. 25 per head of population, and the gold and silver trinkets, in which form the hoard is usually kept, are often employed as security to raise money for current expenses. Insofar, therefore, as these fulfil a function, they cannot be considered idle capital. Again, it must be remembered that whatever savings consequent on the rise of agricultural prices in recent times the peasant has been able to make have either passed out of his hands through the exigencies of social and customary ceremonies or other forms of wasteful expenditure, or else been absorbed imperceptibly in the raising of the standard of living. In these circumstances, and in view of the heavy load of indebtedness that the peasant is admittedly labouring under, too much cannot be built upon the possibility of evoking any considerable response from the masses of the people to an immediate demand for any form of capital. In this view, it is possible, again, to exaggerate the significance of the readiness with which Government loans and company flotations were taken up in the years immediately following the signing of the Peace Treaty. This liberation of capital has been due to circumstances which, it may be contended, have worked themselves out—the exceptional position of advantage which India enjoyed during the war, the enormous inflation of currency which characterised the war-period, as well as the response to a new stimulus, political as well as economic, which imparted to the current resources of the people a new mobility, have all contributed, to a more or less extent, to the phenomenon already commented upon.

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[1] Cmd. 51 of 1919; p. 181.

Indian industries, therefore, will have to look to other sources than the farmer for their current supply of capital. An analysis of the voluminous evidence recorded by the Industrial Commission[1] brings out the only too well-known fact that the main sources of indigenous capital are the commercial and professional middle classes, the Indian money-lenders and the larger landed proprietors.[2] The problem of current finance is therefore to some extent simplified, insofar as the classes of the people who can afford to lnad the new industrial development are already in touch with the technique of industrial finance. A word must, however, be said in regard to the position of the money-lenders and the landed proprietors. The former are now exploiting the economic weakness of the individual peasant and the social needs of his family. It is not unreasonable to expect that with the development of the co-operative movement, his clientele and his opportunities would tend to diminish, and that he would be thus forced to turn his attention more and more to commercial and industrial investments. Co-operation has for India, therefore, a much wider significance than mere agricultural regeneration. The position of the landed proprietor in regard to industrial participation is somewhat dubious; immobility of resources is his principal weakness, nor is he always free to do what he likes with his land (compare the case of the bigger zemindaries); but a proper appreciation of their duties and responsibilities ought to direct the attention of this class of people to the development of agricultural and rural industries, while the bigger Zemindars have enough revenue to enable them to take an active share in the promotion of local and national industries.

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[1] The first part of its questionnaire has reference to the problem of financial aid to industries, and Question 2 refers to the sources from which industrial capital is principally drawn.

[2] Vide cmd. 234 of 1919, pp. 1, 126, etc.

By far the most important item in the Indian industrial programme of the immediate future is the part that Government is called upon to play in the provision of current resources. As in the nature of the case as affecting all oriental people, the people of India demand of their Government, not a mere removal of difficulties and hindrances to economic development, but an active intervention on their behalf, and a lead at once forceful and inspiring. They quote the example of Japan, and urge that, in the absence of adequate provision being made by the Government to make capital available for industries, the progress so eagerly desired will be indefinitely delayed.

The Indian Industrial Commission had made some detailed recommendations as to how Government may safely advance funds for industrial purposes, the principle of which was accepted by the Government; and at least one Provincial Legislature has now ventured to pass an Act for the giving of state aid to industries. Section 5 of the Madras State Aid to Industries Act, which became law on the 20th of December, 1922, enumerates the classes of industries to which the Act applies, and runs as follows:—

"Sec. 5. (1) The industries to which aid may be given under this Act shall be such as have an important bearing on the economic development of the country, and shall be:

(*a*) new or nascent industries, or

(*b*) industries to be newly introduced into areas where such industries are undeveloped, or

(*c*) cottage industries.

(2) No such aid shall be given to any joint stock company unless:

(*a*) the same is registered in India on a rupee capital, and

(*b*) the company conforms to such rules as may be made by the Local Government from time to time requiring that a minimum number or a proportion of the members of its Board of Management shall be Indians. Provided further, that every recipient of aid under this Act shall make such provision for the training of apprentices as the Local Government may, from time to time, prescribe.

(3) The decision of the Local Government as to whether the conditions of this section are fulfilled shall be final."

The 6th Section refers to the methods of giving state assistance, and is as follow. "Sec. 6. Subject to the provisions of this Act and of the rules framed thereunder, the Local Government shall have power to give aid to an industrial business or enterprise in one or more of the following ways :—

(*a*) by granting a loan,

(*b*) by guaranteeing a cash credit, overdraft, or fixed advance with a bank,

(*c*) by paying a subsidy for the conduct of research, or for the purchase of machinery,

(*d*) by subscribing for shares or debentures,

(*e*) by guaranteeing a minimum return on part of the capital of joint stock company,

(*f*) by making a grant on favourable terms of land, raw material, firewood, or water, the property of the Local Government."

And Section 12 gives the Government power to appoint its own directors to control the enterprise assisted.

Other provinces, it may be expected, will soon follow the lead given by Madras; and we may expect in the near future a great degree of Government aid to industries of all kinds. But extraneous assistance of this sort should be accompanied by the inculcation of the principle of self-help, so that industry may be in a position to support itself at a not very distant date. So long as the present economic impetus helps to raise the average productivity and the national dividend, its cumulative effect is bound to tell on new industrial developments. To take full advantage of this possibility, the need for social reform and re-adjustment cannot be too strongly emphasised. The spirit has been evoked by education, and although the new movement has had unpleasant political bearings, it is to be hoped that a discriminating encouragement to its economic and social tendencies will not be denied by the Government. For, it is this new education that has opened out economic possibilities, that is reforming society, and eliminating wasteful social institutions and religious customs. That all these tend to the creation of new capital should not be overlooked; and in the same measure as education spreads abroad, will the capital resources of the people accumulate in utility and volume.

Note.—Development of Joint Stock Euterprise in India.

The following table gives the number of companies at work in India and their authorised and paid-up capital at the end of each year from 1895-96 to 1910-20.

Year	Cos. at work.	Authd. Cap.	Paid-up cap.	Increase or decrease in paid-p. c. capital.
1895—1896	1309	Rs. 416,189,114	Rs. 291,147,434	6. 7%
1896—1897	1596	489,924,634	305,867,364	5. 1%
1897—1898	1572	493,376,391	323,213,241	5. 7%
1898—1899	1417	505,310,438	348,202,738	7. 5%
1899—1900	1340	493,861,588	346,589,971	—0. 7%
1900—1901	1366	509,545,295	362,756,630	4. 1%
1901—1902	1405	521,824,551	373,981,970	3. 8%
1902—1903	1440	525,032,571	380,770,700	1, 7%
1903—1904	1488	544,038,490	387,366,713	1. 7%
1904—1905	1550	568,824,446	403,225,678	4. 0%
1905—1906	1728	637,280,606	418,352,329	3. 8%
1906—1907	1922	748,339,639	442,688,739	5. 8%
1907—1908	2061	884,533,789	508,138,938	14. 8%
1908—1909	2156	1,090,290,192	570,319,222	12, 2%
1909—1910	2216	1,179,985,512	614,431,661	7. 8%
1910—1911	2304	1,579,904,977	640,496,826	4. 2%
1911—1912	2465	1,627,488,649	693,778,595	8. 3%
1912—1913	2552	1,738,759,155	721,013,855	4. 0%
1913—1914	2744	2,333,361,398	765,618,274	6. 0%
1914—1915	2545	2,300,946,835	807,881,472	5. 2%
1915—1916	2476	1,842,090,337	850,243,528	5. 2%
1916—1917	2513	2,000,421,849	908,956,218	6. 9%
1917—1918	2668	2,341,884,632	991,120,816	9. 0%
1918—1919	2789	2,550,949,672	1,066,145,465	7. 6%
1919—1920	3668	5,482,259,476	1,232,135,739	15. 6%

Figures for 1919-20 relate to British India and to the Indian States of Mysore, Baroda, Gwalior and Indore, while those for earlier years relate to British India and Mysore only, (From Publication No. 1477 of 1922 of the Department of Statistics, Government of India relating to Joint Stock companies in India, 1919-20.)

PROTECTION TO THE INDIAN STEEL INDUSTRY *

A. RAMAIYA, M. A.

In accordance with the recommendation of the Indian Fiscal Commission, contained in para 107 of their Report, that the "question of extending protection to the manufacture of steel should be one of the first subjects of inquiry by the Tariff Board", the Government of India have selected first the steel industry for investigation by the newly constituted Tariff Board, and the Board is now holding its enquiry and examining witnesses in that connection. The witnesses examined so far would seem to be mostly persons either actually engaged in or personally interested in advocating the cause of fostering the development of the industry and their views as expressed, may be said to point predominently in favour of a strong protection to be given to the industry by means of a thirty or thirty three per cent. import duty to be levied on all foreign steel coming into the country. From the summary report of their evidence in the newspapers it does not, however, seem that the subject has been properly considered by them in all its aspects, particularly with reference to the effect that it will have on the general well being of the country. In dealing with the qnestion of protection to be given to any industry it is very necessary, as pointed out by Dr. Marshall[1] that in as much as those who can speak with the fullest knowledge on the technical side of such a question are likely to have a strong personal interest, in its securing an answer that will increase the demand for their services or conduce

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* [Substance of a Lecture delivered to the Economic Section of the American Mission College, Madura.]

[1] Marshall, *Money, Credit and Commerce*, p. 219.

to the augmentation of their own profits, arguments put forward by them should be scrutinised with exceptional care, even when they come from able men of the highest character. The object of the present lecture is to view the question briefly from the standpoint of a student of economics and if it should be deemed that protection to the industry is necessary or desirable, to suggest the manner in which it should be given—whether by means of an import duty or a bounty—having regard to the best interest of the country as a whole.

The Indian Fiscal Commission make mention in their Report of three general conditions that must be satisfied before protection can be extended to any industry. First, the industry must be one possessing natural advantages for development, such as an abundant supply of raw material, cheap power, a sufficient supply of labour, or a large home market. Secondly, it must be one which without the help of protection is not likely to develop at all or develop so rapidly as may be desirable in the interests of the country. Thirdly, the industry must eventually be able to face world competition without the help of protection.

Now we may apply these considerations to the case of the steel industry in India.

First with regard to the possession of natural advantages. So far as the availability of iron ore is concerned, it may be readily admitted that there are large deposits of ore of good quality in various parts of the country. But in as much as most of such deposits are not found near coal fields they are not profitably workable, at any rate until railway and other transport facilities are made abundantly available and cheap. At present Bengal, Bihar and Orissa are the only provinces where iron ore is mined for smelting by modern methods. The reason for this is that only in these provinces a sufficient supply of coal can be had in close proximity to iron ore, and mining facilities exist for raising the produce without digging far into the earth. The iron and steel industry as well as coal mining are thus naturally confined to these provinces. At the present time there are only two prominent companies which are working the iron and steel works in India. The Bengal Iron and Steel Co. at Kulti (Bengal), in spite of the great and rapidly increasing demand for its products, could produce no more than 89680 tons of pig iron, and 31775 tons of iron castings in 1920. In the same year and under the same favourable circumstances, and in spite of the encouragement given by the government through their placing a large part of their orders before it, the Tata Iron and Steel Company, which is said to be possessed of enormous deposits of ore of good quality, in the districts surrounding their works at Jamshedpur, was equally powerless to produce more than 221,606 tons of pig iron, and 113,222 tons of steel, including rails. No statistics are available to me, with regard to the progress of a third company, the Indian Iron and Steel Co., floated only a few years ago with a share capital of one million pounds, and having its works at Asansol, a favourable situation, being 130 miles from Calcutta and close to the Raniganj, Jheria and Barakar coal fields. None of these three companies would seem to have progressed so rapidly as might be expected at a time when, owing to the Great War, they had a splendid opportunity for development afforded to them, through high prices and keen demand for their products.

There are various reasons for this want of development. In the first place the coal difficulty has been great. There is not much to be said in favour of either the quality or quantity of coal available in the country. Further the working of coal mines is subject to a special difficulty. The classes from which colliery labour is recruited being largely agricultural, coal production is adversely affected by a favourable monsoon, as the cultivator in the neighbourhood only turns to mining when his crop fails or his savings are exhausted. The total production of coal in India in 1920 was only 17,962,214 tons, as compared with the output in the United Kingdom in the same year, which was 229,532,081 tons, nearly 13 times as much as the Indian production. Thus the country being deficient in her coal supplies, an enormous quantity of coal, coke and fuel has to be imported every year, the value of the imports for last year (1922-23) being Rs. 3,22,46,990. Thus the want of a sufficient supply of cheap coal is a serious handicap to Indian industrial development in general, and particularly to the growth of the iron and steel industry. The importance of coal to the latter industry cannot be too much emphasised. A study of the progress of the industry in England and America will make it perfectly clear how much both the site and growth of the industry are determined by this all important factor. In the words of Professor Taussig: "It was the abundant and excellent coal which formed the sure basis of the manufacturing industries and the permanent foundation of iron and steel making in the United States of America as well as in England."[1] Again, as Jevons rightly emphasises in his book on the "Coal question," the geographical condition on which a large iron industry must rest is the contiguity of iron and coal. Of course by an extensive development of railway and other transport facilities and the utilisation of mechanical appliances for digging, depositing, loading, unloading and such processes, the importance of this condition will be reduced to a minimum. In fact in the United States, at every step direct manual labour is being avoided and huge quantities of coal and iron are moved and managed by machines and other mechanical devices at a cost astonishingly low. But in India such facilities are entirely wanting at the present time, and even if the country should henceforth advance at a very rapid rate it will take a considerable time, not less than a quarter of a century in any case, for the country to have any command over such facilities; so that the available deposits of iron ore in various parts of the country must until then remain unworked both efficiently and economically, for want of an abundant and cheap coal supply. The scope and limitation for the development of the iron and steel industry in India are succinctly stated by the Indian Industrial Commission (1916-18) "Iron ore is found in many parts of the Indian continent, but the instances in which ore of good quality exists in suitable proximity to satisfactory coal supplies are not very numerous, though sufficient in all probability to warrant large extensions of the existing iron and steel works."[1]

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[1] Taussig, '*Some aspects of the Tariff Question*' Ch. IX, p. 126.

It will be seen from this that there is not much scope in India for a vast extension of the steel industry like that of the giant Steel Corporation of the United States of America or the Iron and Steel works of Birmingham and Sheffield in England, though the existing iron and steel works managed by the three companies already mentioned may be developed to a considerable extent. In any case, if we look at the statistics of the various kinds of iron and steel products imported into the country and compare them will those of what the Indian companies have been able to produce, we shall find that the native production is but a very insignificant fraction both of the quantities imported and of the total requirements of the country every year.

The following will give an idea of the value of

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[1] *Report of the Indian Industrial Commission* (1916-18), para 55.

Government imports and private imports of the various kinds of articles of iron and steel coming from foreign countries:—

Government imports.	1921-22. Rs.	1922-23. Rs.
1. Hardware, cutlery, agricultural implements ..	84,70,376	59,65,471
2 Carriages, carts and parts	1,19,73,457	1,09,82,910
3. Machinery and mill work	1,06,13,735	1,89,07,762
4. Iron and steel (metal or ore)	74,17,154	70,15,767
5. Railway plant and rolling stock	2,43,11,360	2,35,24,579
6. Ships, boats, etc.	32,03,721	20,79,644
7. Telegraphic materials	46,54,377	26,50,315
Total Rs. ..	6,76,44,180	7,11,26,448

Private imports.		
1. Vehicles (excluding railway materials but including shipping parts.)	4,41,53,282	3,42,56,501
2. Umbrella fittings	32,08,404	43,43,925
3. Telegraphic materials	27,06,862	14,51,797
4. Railway materials	18,91,06,135	11,05,80,847
5. Printing and lithographic materials ..	18,10,583	13,41,3123
6. Iron and steel: Iron (1)	79,73,529	62,31,61
Iron or steel (2)	16,65,46,296	14,13,35,508
Steel (3)	3,65,90,742	3,61,67,391
7. Machinery and mill work	34,25,50,806	23,47,85.632
8. Instruments, apparatus, appliances and parts..	5,14,80,521	3,12,40,661
9. Hardware and cutlery	5,91,90,408	5,14,89,897
10. Electroplated ware	16,82,295	23,14,933
Total Rs. ..	91,69,99,863.	63,56,40,017

Compared to these huge imports, the production of the Indian companies has been insignificant. In the year 1920, which witnessed their maximum output under favourable conditions, their production was as follows:—

		Tons.	Estimated value Rs.
Messrs Tata's Works	(1) Pig iron ..	221,606	3,40,00,000
	(2) Iron and Steel ..	113,222	5,66,00,000
The Bengal Iron and Steel Co.			
	(1) Pig iron ..	89,650	1,55,00,000
	(2) Iron and Steel ..	31,775	1,56,00,000
	Tons ..	456,253	Rs. 12,17,00,000

It will be seen from this that India almost entirely depends for her requirements of iron and steel for industrial and other uses on her imports from foreign countries. Of course, it will be to her great national good if her steel industry can be developed to such an extent as to satisfy her own entire demand and make her independent of foreign supplies. But with her present limited possibilities no such hope can be entertained, even if the industry were to be stimulated by a very high protective tariff. In the absence of rich natural resources and facilities for their effective and economic utilisation, and when there is no possibility of the home production increasing sufficiently to cope with the country's demand, a heavy duty levied on her imports of iron and steel manufactures will have merely the consequence of throwing an unnecessary, useless and permanent burden on the community in the shape of high prices; and in those cases in which such manufactures go to satisfy any real and necessary wants of the people or advance their industrial progress they will even prove positively detrimental to national interests. Those companies that have at present a monopoly of iron and steel products in India will profit a great deal at the expense of the community, for which except the kindling and exploiting of a patriotic sentiment they will make no return. It will be admitted by all people that the country as it stands is in great need of material and moral progress in all directions. A rise in the price of railway materials, printing and other machinery, mill work. telegraphic materials, agricultural implements, electrical apparatus, etc., cannot but impede the progress of the country. Most of these products of iron and steel being needed for providing one or other of the requisites of civilized existence, any heavy protective duty, nay, even a slight revenue duty, on the imports of such products cannot but be condemned as highly detrimental to the well being of the people at large. Protection by means of an import duty therefore is not to be thought of, in the case of the iron and steel industry in India.

But seeing that the industry is a basic industry having much national importance about its development, Government encouragement may be given for the expansion of the existing iron and steel works to their uttermost capacity, both by means of direct bounties on production and by the offer of railway and other transport concessions. Such bounties, while stimulating the development of the industry as effectively as a protective duty, will avoid the drawbacks of such duty. There will be no rise in price, and no hindrance to the growth of other and dependent industries, or to progress; while at the same time production in the country will increase, induced by the supplementary profits assured by the bounties.

The view of the Indian Fiscal Commission would also seem to be in favour of protection by means of bounties rather than by import duties in cases like that of the steel industry. In one place, speaking of industries which are new or which like the steel industry are producing only a very small proportion of the needs of the country, they say that state assistance to such industries should as a rule be given in the form of bounties.[1] In another place, dealing more particularly with the steel industry, they say: "We must not be understood to say definitely that the production of any of these articles requires Government assistance or that if government assistance is required it should necessarily take the form of protective duties. On the contrary in the case of such industries assistance by means of bounties or other devices of this nature may be found suitable either in lieu of tariff protection or in addition to it".[2] Again in a third place they point out that "the best way of assisting a basic industry is by a bounty rather than by a protective duty. In any case the development of certain basic industries may be in the interests of the country generally, either because like the iron and steel industry they will stimulate the establishment of other industries dependent on them, or because, like some of those industries which have been classed as 'key' industries under the British Safe-guarding of Industries Act, their products are of such importance that any interference with their supply, such as might arise from a cessation of imports, would bring other industries to a standstill. Our general view is that the decision whether protection should be given to basic industries should rest rather on considerations of national economics than on the economics of the particular industry."[1] Also with regard to the manufacture of machinery in India they would suggest that protection should be given by means of bounties and not import duties. Thus it is clear that the proper method of giving encouragement to the steel industry in India is by means of bounties and not import duties.

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[1] *Report of the Indian Fiscal Commission*, para 102.

[2] *Ibid*, para 107.

In order to make protection effective a safe-guard will also have to be provided against a possible danger,—namely, dumping. The Tata Iron and Steel Company placed some figures before the Indian Fiscal Commission purporting to show that British steel is being dumped into this country by being sold below its cost of production in order that such dumping may destroy or weaken the chances of progress of the Indian steel industry. The Commission, however, expressed its opinion that the fact of such dumping was not satisfactorily established before them, though they themselves recognised that proof thereof was hard to obtain. But in all cases in which such dumping exists and is really calculated to destroy or impede the progress of the Indian industry, it may be suggested that the imposition of such an import duty on the products sought to be dumped as will be just sufficient to take away its destructive effect may be imposed on the recommendation of the Tariff Board or any other specially constituted Board which should inquire and report as to such matters. In this connection the same procedure may be adopted in India as is provided in Part II of the Safe-guarding of Industries Act for the United Kingdom (11 and 12 Geo. V. Chap. 47) where on complaint being made to the Board of Trade that any foreign goods competing with British Industries are sold or are offered for sale in any part of the United Kingdom at prices below their cost of production in their respective manufacturing countries the Board refers the matter to a committee constituted for that purpose and on the report of the Committee, placed before and approved by a resolution of Parliament, a special protective duty is levied on such goods in order that they may not unfairly compete with or destroy the home industry concerned.

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[1] *Ibid*, para 118.

So far we have dealt with the natural resources available and the manner in which protection should be given to the industry. But there are some general difficulties in the way of the development of the industry which have also to be provided against if the protection that is sought to be given should prove effective. As the Indian Fiscal Commission themselves point out the mere imposition of protective duties, however scientifically contrived, will not by itself produce the full industrial development which we desire. Other essential conditions are a sufficient supply of skilled labour, technical knowledge, capital, and organization. All these four factors are generally deficient in almost all industries in India and their want has been the chief impediment to industrial advancement in the past. In the iron and steel industry, as well as in coal mining, a sufficient and steady supply of skilled labour is essential. But industrial labor in India being mainly recruited from the agricultural classes, is generally unskilled and as we have already noticed, its supply is liable to be much affected by favourable monsoon conditions. Such labor has to be trained and has to be weaned from agriculture and attracted by the offer of more advantageous conditions in the industry such as high wages, good housing, and sanitary and educational facilities.

Closely connected with the difficulty of labor supply is the want of technical knowledge. In the iron and steel industry more than in any other industry, advancement in technical knowledge and skill helps a long way to the rapid development of the industry. In the three most prominent steel producing countries of the world, it is this advancement in applied science that has helped the vast growth of the industry. Professor Taussig speaks thus with reference to the United States: "An important cause throughout the industrial field was unquestionably the wonderful growth of technical and scientific education. The supply of intelligent and highly trained experts to whom the management of departments and separate establishments could be entrusted with confidence facilitated the process of consolidation and the organisation on a grand scale of widely ramifying enterprises. It may be a question how far our scientific schools and institutes of technology have been successful in stirring invention and developing initiative talent. The prime essential for leadership seems to be here as elsewhere in the intellectual world, inborn capacity. But the rapid spread and complete utilisation of the best processes were greatly promoted by them. They were largely instrumental in enabling advantage to be taken of chemical, metallurgical, and machanical improvements in the iron and steel works. Their influence showed itself no less in the railways, the great commercial and manufacturing places, the textile works, and manufacturing establishments at large. Their influence in permeating all industry with the leaven of scientific training was strengthened by the social conditions which enabled them to attract from all classes the plentiful supply of mechanical talent."[1] The same remarks apply also to England and Germany. In all the three countries technical advance was both rapid and extensive. So far as the Indian Steel industry is concerned, there is an absolute want of technical training in the country, with the result that for skill and knowledge, the industry has to look to foreign countries for supply. On this point the Report of the Fiscal Commission itself is this: "The evidence which we have heard suggests that Indian pig iron can hold its own without any protection. Steel production on the other hand involves highly technical processes which until Indian labor is fully trained, entail the importation of expensive foreign labour".[2] Again in another place: "Too long has India been dependent in the more skilled branches of industry on imported labor and nothing is more likely to cheapen the cost of production in Indian industries than the replacement of imported skilled labor by equally efficient Indian hands".[3] Thus if a policy of protection to the industry is intended to bring in any beneficial effect one of its prerequisites undoubtedly is the affording of facilities for the advancement of science and training in technical knowledge and skill. As pointed out by Professor Taussig in the book already referred to, it is this rapid technical advance that ensured the success of the Steel Industry both in Germany and the U. S. A.

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[1] Taussig, "*Some aspects of the Tariff Question*," chap. X, pp. 149-50.

[2] *Ibid*, para 107.

[3] *Ibid*, para 123.

In both countries, to use his own words: "The wide application of exact scientific methods was promoted by the diffusion of technological training, while originating and inventive science progressed in a manner to command the admiration of the world." In our own country India, the Government can well help the existing concerns engaged in the industry, in establishing schools for training apprentices and providing for research in applied science; and it may also insist whenever its own orders are placed with any firms it contracts with, that they should afford facilities for the technical training of Indian apprentices.

Again in the matter of organisation also, the industry is wanting. This is a defect common to all the industries in the country, and is more or less inherent in its economic system. It is due to the essentially agricultural character of the people and their want of enterprise and governing power in the past. It is however slowly disappearing with the advancement of the western methods of industry and enterprise, and the training that our urban population are having in the various industrial centres. It can effectively and speedily be cured by the attraction of native talent to the industrial rather than to the overcrowded learned professions; by a revolution in the whole system of education and the training of youth and the direction of the intelligentsia of the country from merely philosophical or discussional pursuits to useful industrial occupations.

Closely connected with the difficulty of supply of the above factors, is the problem of scarcity of capital for industrial enterprises generally. Though the Fiscal commission would seem to be hopeful of a sufficient supply of native capital for all the country's industrial enterprises, one who understands deeper the real economic situation in the country and the poverty of its people may well suspect the financial strength of the country for such large industrial undertakings as developing the iron or steel works which involve large and complex plant, and the laying out of extensive railways, both of which require enormous capital resources. Foreign capital has therefore been necessarily resorted to, though India views with suspicion the employment of foreign capital for developing Indian industries, on account probably of their tendency to restrict the scope! or diminish the chances for native control of such industries, as otherwise industrial enterprises will have to be indefinitely delayed or postponed, for want of native resources. The foreign capitalist will bring along with himself not only capital, but the organisation necessary for utilising such capital and also technical knowledge and skill. As the Indian Fiscal Commission themselves point out, "apart from the intrinsic benefits of increased supplies of capital the foreigner who brings his capital to India, supplies India with many things of which at her present stage she stands greatly in need. It is on the whole the foreign capitalist who imports into the country the technical knowledge and the organisation which are needed to give an impetus to industrial development. It is to him that we must look largely at first for the introduction of new industries and for instruction in the economics of mass production. By admitting foreign capital freely India admits the most up-to-date methods and is assimilating those ideas. If she tried to exclude them, the policy of industrialisation which we contemplate could with difficulty be brought to a successful pitch. We hold therefore that from the economic point of view all the advantages which we anticipate from a policy of increased industrialisation would be accentuated by the free utilisation of foreign capital and foreign resources."[1]

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[1] *Ibid*, para 289.

All these remarks apply with special force to the case of the iron and steel industry. For the successful working of the industry, even within the limited possibilities indicated by the Industrial commission (vide Report para 55) it will not be enough to give it protection by means of bounties or import duties; the more necessary condition for it is the creation of facilities for an adequate supply of skilled labour, technical knowledge, business power and capital. Without these no industry can grow on modern methods, and much less, the iron and steel industry, which involves at every stage highly technical processes, efficient supervision, and large plant.

NOTE ON THE DIVERGENCE OF ESTIMATES OF THE VOLUME OF THE RUPEE CIRCULATION IN 1920.

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Various attempts have been made from time to time to estimate the quantity of metallic currency in circulation in different countries, but no method appears to have yet been found which may safely be applied under all possible circumstances. The following note gives the results arrived at for the rupee circulation in 1920 and shows how very different from each other are the results thus obtained.

Mr. Newmarch's brilliant attempt[1] is unfortunately vitiated by doubtful figures used by him as his basis. Prof. W. S. Jevons in 1868 suggested a new method, which directed the attempts of later writers on altogether new lines.[2] His method, although it does not give the actual amount in circulation, is useful in so far as it fixes the maximum limit. The figure obtained by his method for the rupee circulation in 1920 is 394 crores. This method was further developed by Mr. Harrison[3] and Mr. Adie.[4] Mr. Findlay Shirras went still further, when in Appendix II of his Indian Finance and Banking he gave two methods, one for finding the circulation in 1912 and the second for finding that in 1913 from the 1912 estimate. In the second method Mr. Shirras has attempted to take into account all possible errors and to make allowance for them, and I think successfully.

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[1] Appendix XXII, Vol. VI, Tooke's *History of Crises.*

[2] W. S. Jevons, *Investigations in Currency and Finance,* 2nd ed., pp. 239-49.

[3] Economic Journal, 1891.

[4] Supplement to the Gazette of India, September 1900.

Basing our calculations on the figure obtained by him for 1919, we get the following equations.

$$\begin{aligned}
\text{Log } C_{20} &= 2.41684\\
\text{Log } C_{20} &= 2.38329\\
\text{Log } C_{20} &= 2.38553\\
\text{Log } C_{20} &= 2.44680\\
\text{Log } C_{20} &= 2.46297\\
\text{Log } C_{20} &= 2.51030\\
\text{Log } C_{20} &= 2.53304\\
\text{Log } C_{20} &= 2.48341\\
\text{Log } C_{20} &= 2.42001\\
\text{Log } C_{20} &= 2.34440\\
\because C_{20} &= 255 \text{ Crores.}
\end{aligned}$$

By Professor Edgeworth's method,[1] we get the following equations.

$$\begin{aligned}
\gamma - \lambda - 2.59528 &= 0\\
\gamma - 2\lambda \cdot 2.65527 &= 0\\
\gamma - 3\lambda - 2.67839 &= 0\\
\gamma - 4\lambda - 2.64694 &= 0\\
\gamma - 5\lambda - 2.35783 &= 0\\
\gamma - 6\lambda - 2.61270 &= 0
\end{aligned}$$

The first five equations give $C_{20} = 539$ crores and the last five give $C_{20} = 572$ crores.

Both of these figures differ so much from that obtained by Mr. Shirras' method, and also exceed the limit set by Prof. Jevons' method that we are inclined to re-examine the two methods and also to look carefully into the abnormal condition of the years 1917, 1918 and 1919 and find out what effect these special circumstances have upon the validity of the assumption made in the two methods.

These three years were undoubtedly years of abnormal wastages and still more abnormal monetary condition. Another fact to be borne in mind is that as many as 144 lakhs of rupees bearing the year 1919 on them were actually coined in 1920 and so it is doubtful whether the whole of the 1919 coinage came into circulation in 1920, although it seems to have obtained its maximum percentage in that year. Another peculiarity that is obvious on looking to the Rupee Census is that whereas formerly the coinages generally attained their maximum percentage two or three years after issue, in the last four or five years the maximum percentage seems generally to have been reached only one year after issue.

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[1] Journal of the Royal Statistical Society for July 1920, p. 612 .

Prof. Edgeworth agrees with Mr. Harrison and Mr. Adic in thinking that while dealing with the rate of wastage the variation from year to year in the volume of currency might be neglected. This may not involve large errors when we are dealing with normal cases, but obviously it will not be correct to neglect the variations in the special years 1917, 1918 and 1919. The difficulty will be still greater if the coinage of rupees is suspended for some time, as it is at present, and then after that it is required to arrive at an estimate of the circulation. Moreover, in years of abnormal wastages r may vary within very wide limits: If these variations are disregarded the estimate arrived at must necessarily be so far away from the actual amount that it will lose most of its usefulness.

Prof. Edgeworth's short method although free from errors due to many assumptions still contains one which cannot safely be neglected in 1920, namely that r has the same value for a series of years and coinages and that x also remains constant.

The enormous divergence in the estimates arrived at by the two methods necessitates a re-examination of them, so that some modification of the method may be found which might provide for all cases.

In India, we have a unique opportunity for developing the late Professor Jevons' method, because there exist figures for the Rupee Census continuously year by year from 1876 onwards.

KAUTILYA CIRCLE

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QUESTIONNAIRE No. 2

FOR

The Family Budget of an Agriculturist.

INTRODUCTORY

I. Address.

II. Caste of family.

III. Number in family :—

	Men.	Women.	Children. (under 14.)
(i) Number residing in the village.			
(ii) Number residing abroad, and contributing to the income of the family.			
(iii) Dependents not living at the above address.			
Total			

FAMILY INCOME

during the year 192....to..192....; covering the *fasli* year.

I. *Income from agriculture.*

(A) Total area under the cultivation of the family.

(*a*) Occupancy : (*i*) in the village.
(*ii*) in the neighbouring villages.

(*b*) Non-occupancy : (*i*) in the village.
(*ii*) in the neighboring villages.

(*c*) In the company of a fellow cultivator.

(*d*) On *batai* (metayage tenure.)

(B) Number of *hals* kept by the family.

(C) Number of people generally working on agriculture.

(D) Area sown and harvested during the *kharif.* (Give the period over which the *kharif* lasts in that locality).

(*i*) How much under each individual crop.

a.
b.
c.
d. etc.

(2) Number of *hals* used in *kharif.*

(3) Quantity of seed per *bigha* or acre used for each crop.

For each kind of seed ask the following questions:—

(i) Quantity of seed: home kept.
(ii) „ „ „ : purchased for cash.
(iii) „ „ : taken from the *sowcar.*
(iv) „ „ : taken from the landlord
State the terms.
(v) Total value of the seed.

(4) Quantity of manure applied to the *kharif* fields.

(i) Quantity of manure : home kept.
(ii) Quantity of manure: purchased.
(*a*) Rate of purchase.
(iii) Value of the manure.

(5) Number of ploughings done to each field.

(6) Number of people permanently engaged in *kharif.*

(*a*) Of the family.
(i) Men.
(ii) Women.
(iii) Children.
(*b*) Outside the family.
(i) Men.
(ii) Women.
(iii) Children.
(c) Rates of wages in the village.
(i) Men.
(ii) Women.
(iii) Children.
(*d*) How many days each was engaged?
(*c*) Total amount paid in wages during the *kharif.*

[*N. B.* Include in this the wages, though not actually paid, of the members of the family working on the fields.]

(7) Number of waterings done to the *kharif* fields.

(*a*) Any extra hands engaged.
(*b*) Expenses.

(8) Weedings done to each field.

(*a*) Any extra hands engaged.
(*b*) Expenses.

(9) Days spent in reaping.
    (*a*) Any extra hands engaged.
    (*b*) Expenses.

(10) Days spent in thrashing.
    (*a*) Any extra hands engaged.
    (*b*) Expenses.

(11) Gross produce in kind of each crop.
    (*a*) Quantity paid to laborers.
    (*b*) ,, ,, ,, village menials.
    (*c*) ,, ,, ,, ,, artizans.
    (*d*) ,, ,, in alms giving.
    (*e*) ,, ,, in *batai* or to *sajhi.*
    (*f*) ,, sold.
    (*g*) Prices at which sold.
    (*h*) Quantity of each grain etc. given to the land-lord.
        (i) Prices at which sold to the land-lord.
    (*i*) Quantity of each grain etc. given to the *sowcar.*
        (i) Prices at which sold to the *sowcar.*
    (*j*) Quantity kept.
        (i) For seed.
        (ii) For home consumption.
        (iii) Value in money of the above.
        (iv) When consumed. Length of the period.
    (*k*) Rent in money paid to the land-lord or the Government.
    (*l*) Money paid to the *sowcar.*
    (*m*) Money paid to the Co-operative Society.

(12) Gross produce in *karbi* or *bhusa*, or stalk from each crop.
    (*a*) Quantity paid to the laborers.
    (*b*) ,, ,, ,, the village artizans.
    (*c*) ,, ,, ,, the village menials.
    (*d*) ,, ,, in alms giving.
    (*e*) ,, ,, in *batai* or to the *sajhi.*
    (*f*) Quantity sold.
        (i) Prices at which sold.
    (*g*) Quantity given to the land-lord.
        (i) Rates at which given.
    (*h*) Quantity given to the *sowcar.*
        (i) Rates at which given.

(*i*) Quantity kept for the cattle.

(i) Its value. When consumed? Length of the period.

(*j*) Estimate of crop consumed by the cattle during the season.

(*i*) Its money value.

E. Area sown and harvested during the *rabi.*

[*N. B.* Repeat the same questions as in *kharif.*]

F. Live-stock used permanently in agriculture.

(1) Name.	Cost.	Interest on the sum during the Fasli year.
(i) Bullocks.		
(ii) He-buffaloes.		
Total		

(2) Feed given per day to each bullock or he-buffaloe in

(*a*) *Dana* (grain).

(*b*) Fodder.

(*c*) Salt.

(3) Total quantity of per year of:

(*a*) *Dana*.

(*b*) Fodder.

(i) How much purchased?

(ii) How much secured from the field?

(iii) How much borrowed? Rate & terms.

(*c*) Salt.

(4) How many men look after them?

(*a*) Wages of the men.

(5) Expenses on shoeing etc.

(6) Estimated total expenditure on live-stock.

G. Agricultural capital.

1. Name.	Total money cost.	Interest during the year.
(*a*)		
(*b*)—so on.		
Total		

H. Net income from agriculture.

I. Wages received from agriculture through the members of the family working on it.

J. Total income from agriculture.

II. *Income from trade.*

	Name of the commodity stored.	Quantity.	Purchase price.	Total value.	Period for which stored.	Selling Price.	Net gain.
A.							
	(*a*)						
	(*b*) and so on.						
	Total.						

B. Waste in the above.

- (*a*) Quantity wasted for each.
- (*b*) Its money value.
- (*c*) Total loss in money.

C. Any men specially engaged in this.

- (*a*) Number of days.
- (*b*) Wages.
- (*c*) Total wages.

D. Interest paid on money borrowed for investment in trade.

E. Any tax paid on income from trade.

F. Net income from trade.

III. *Income from interest.*

A.	Name.	Rate of interest.	Total money received.
	(*a*) Loan of money.		
	(*b*) Quantity of grain.		
	(*c*) Loan of live stock.		
	(*d*) Loan of other capital goods.		
	Total		

B. Any men engaged in this.

- (*a*) Number.
- (*b*) Period for which engaged.
- (*c*) Wages.
- (*d*) Total expenditure in wages.

C. Interest on money borrowed for investment in money lending.

D. Any tax paid on this?

E. Net income from lending.

IV. *Income from carting etc..*

A. Number of carts.

B. Run by bullocks or buffaloes?

(*a*) Are the bullocks used only for carting? If not, then what part of the year they are used for carting, and what part for agriculture?

(*b*) Is the cart run when there are no agricultural operations, or all the year round?

C. How many persons attend on carting?

(*a*) Do they do nothing else? If not, then what part of the year they gave to carting?

D. Parts of the year when the services of the cart are in general demand.

(*a*) Length of the periods.

(*b*) Rates of carriage during different periods.

(i) In money.

(ii) In feed to the cattle.

(iii) In feed to the men.

(iv) In kind.

(*c*) Money value of all these.

E. Total gross income from the cart.

F. Feed to the bullocks or buffaloes per day.

a.	Bhusa, grass etc.	Its money value.
b.	Dana.	"
c.	Salt.	"
d.	Ghee.	"
e.	Gur.	"

G. Daily total expenditure in money.

H. Total expenditure on feeding for the year.

I. Expenditure on shoeing, covering etc.

J. Expenditure on repairs to the cart.

K. Value of the cart.

(*a*) Yearly interest on it.

L. Value of the bullocks.

- (*a*) Yearly interest on it.

M. Total yearly expenditure.

N. Wages of the men engaged in carting.

O. Total expenditure on cart.

P. Net income from carting.

V. *Income from camels or bullocks or any other beast of burden*

A. Number.

B. Number of persons engaged.

- (*a*) Rates of wages.
- (*b*) Period for which engaged.
- (*c*) Total paid in wages.

C. Periods when used.

- (*a*) Approximate length of the periods.

D. Capacity to carry.

E. Rates of carriage during different periods.

F. Total amount of money received from this source.

G. Value of the *bharkas.*

- (*a*) Interest on the money invested in the *bharkas.*

H. Calculate the maintenance expenses of the beasts of burden on the same lines as indicated before.

I. Total expenditure.

J. Net income from this source.

VI. *Income from milch cattle.*

A. Cows.

- (*a*) Number.
- (*b*) How many gave milk?
- (*c*) And for how long, each gave milk?
- (*d*) Quantity of milk per day.
- (*e*) How much sold?
- (*f*) Price at which sold.
- (*g*) Quantity of ghee per week.
- (*h*) Price of ghee.
- (*i*) How much ghee sold?
- (*j*) How much milk consumed in the family?
- (*k*) Its value.

(*l*) How much ghee consumed in the family?

(*m*) Its money value.

(*n*) Cattle dung.

(i) Its estimated value in money.

(*o*) Feed per cow including the calf.

Kind of feed.	How much per day.	Total for the year.	Value.	Remarks.
(i) Bhusa.				
(ii) Karbi.				
(iii) Dana.				
(iv) Oil cake.				
(v) Salt.				
(vi) Gur.				

(*p*) Total expenditure in money.

(*q*) Total income.

B. Buffaloes. The same.

C. Sheep. The same.

D. Is there any pasture land in the village?

E. What part of the year cattle are let loose for grazing in the village?

F. Do you send your cattle for grazing outside? If yes:

1. For how long?
2. Rates for different kinds of cattle.
3. Total expenditure on them in this way.

VII. *Income from poultry.* The same.

VIII. *Income from cattle breeding.* The same.

IX. *Income from trees.*

A. Have you any trees on your farm etc.?

(*a*) How many?

(*b*) Any fruit trees.

B. Income from trees.

(*a*) In fruit.

(*b*) Its money value.

(*c*) In cash.

(*a*) From the sale of wood.

C. Total income.

D. Any man engaged in looking after trees.

(*a*) Number.
(*b*) Wages.
(*c*) Any other expenditure on trees.

E. Net income.

X. Total income of the family from all the different sources.

FAMILY EXPENDITURE

A. On food.
1. Daily quantity used in the kitchen of:—
(*a*) Flour.
(*b*) Dal.
(*c*) Oil or ghee, or both.
(*d*) Salt.
(*e*) Masala.
(*f*) Vegetables.
(*g*) Meat.
(*h*) Sugar or jaggery.
(*i*) Milk.
(*j*) Weh.
2. How much generally does
(*a*) An adult man.
(*b*) A woman.
(*c*) A child.
eat in the family?
2. How much milk is used by each person?
3. How much milk is used by children?
4. Parts of the year when no *dal* is used.
5. Parts of the year when mangoes enter most in diet.
6. Parts of the year when vegetables and *sag* are largely used.
7. When salt and red-pepper are only used.
8. What grains used in what parts of the year?
(*a*) Length of the periods, during which different grains are used.

B. Fuel.
1. Does it consist of cow-dung cakes or fire-wood?
2. If of both, then in what proportions?
3. During what parts of the year dung-cakes are used?
4. When fire wood is used exclusively?
5. How do you secure cow-dung cakes, and fire-wood?
6. Prevailing rates of cow-dung carkes, and fire-wood,
7. Total expenditure on fuel,

C. Clothing.

1. For males.
   - (*a*) *Dhoties*. How many generally purchased per adult man?
     - (i) How many each adult man has in the family?
     - (ii) How many new, and how many old?
     - (iii) Prevailing prices of *dhoties*.
     - (iv) How many purchased this year, and for how much?
   - (*b*) *Kurtaz*. Repeat the same questions as in (*a*).
   - (*c*) *Mirzai*. ,, ,, ,,
   - (*d*) *Bandi* or under shirt. ,, ,,
   - (*e*) *Topi* or cap. ,, ,,
   - (*f*) *Safa*. ,, ,, ,,
   - (*g*) Shoes. ,, ,, ,,
   - (*h*) Any bedding such as *dohar*, *ghalef*, *rizai*, *lihaf*, or blankets, etc. Repeat the same questions.

2. For females.
   - (*a*) *Langha* or *sari*. Repeat the same questions as above.
   - (*b*) *Phariya* or head piece. ,, ,, ,,
   - (*c*) *Kurti*. ,, ,, ,,
   - (*d*) *Choli* or bodice. ,, ,, ,,
   - (*e*) Bangles. ,, ,, ,,
   - (*f*) *Tika-bindi*. ,, ,, ,,
   - (*g*) *Bichhuas*. ,, ,, ,,
   - (*h*) Other ornaments. ,, ,, ,,

3. For children.
   - (*a*) *Dhoties*. Repeat the same questions.
   - (*b*) *Kurtaz*. ,, ,, ,,
   - (*c*) Cap. ,, ,, ,,
   - (*d*) Shoes ,, ,, ,,

4. For common use.
   - (*a*) Bedding. Repeat the same question.
   - (*b*) Charpai or cot. ,, ,, ,,
   - (*c*) Matteresses. ,, ,, ,,
   - (*d*) Blankets, sheets, etc. ,, ,,

D. Utensils.

1. List of household utensils, and their quality.
2. Names of those purchased during the year; and their prices,

E. Payments to village servants.

1. Barber.
   - (a) What services taken from him during the year?
   - (b) How is he generally paid?
   - (c) What payments were actually made to him during the year?
2. Washerman. Ask the same questions.
3. The sweeper. ,, ,, ,,

F. The village religions functionaries.

1. The *purohit*, what payments were made to him.
2. The *bhat*, ,, ,, ,, ,,
3. The *holi-phuka*, ,, ,, ,,

G. Expenses on medicine.

1. Was there any sickness in the family?
2. Expenses,

H. Education.

1. Are there any members of the family reading
   - (a) in the village school?
   - (b) outside the village?
2. What fees are charged in the village school?
3. What other expenses incurred on education during the year?

I. Expenses on travelling.
J. ,, ,, tobacco.
K. ,, ,, liquor, *bhang*, etc.
L. ,, ,, *pan-supari*.

M. Festivals:—

1. What are the usual festivals held in the village?
2. What are the usual festivals kept in the family?
3. How they are celebrated?
4. Were any of the festivals celebrated during the year?
5. Probable amount of money incurred on them.
6. Any fair or *tamashas* (shows) held in the village or near about, during the year?
7. Did any members of the family go there?
   - (a) Where any purchases made.?
   - (b) How much money spent on them?
8. Did any Katha or some other religious ceremony take place in the house, during the year?

(*a*) Probable estimate of expenditure on these.

N. Social ceremonies :—

1. Did any marriages take place in the family?
    (*a*) Probable expenses on them.
2. Did any *bidai* take place in the house?
    (*a*) Probable expenses on them.
3. Did any births take place in the house?
    (*a*) Expenses on them.
4. Did any deaths take place?
    (*a*) Probable expenses on them.

O. House.

1. Was some repairs done to the house?
    (*a*) What materials were purchased?
        (i) How much spent on them?
2. How many persons worked?
        (i) For how many days?
3. Was outside labor used?
    (*a*) How many?
        (i) Men.
        (ii) Women.
        (iii) Children.
    (*b*) For how many days each worked?
    (*c*) Rates of wages paid.
        (i) Men.
        (ii) Women.
        (iii) Children.
4. Total amount incurred on the house.

QUESTIONNAIRE No. 3

FOR

The Family Budget of a Village Artisan

INTRODUCTORY

I. Name.

II. Fathers' name.

III. Address.

IV. Number of members in the Family.

	Men.	*Women.*	*Children.*	*Total.*
1. Members living in the village.				
2. Members living outside and remitting money home.				
3. Members living outside and depending upon the home.				
TOTAL. ..				

V. Occupation.

A. Name of the chief occupation.

B. Name of the subsidiary occupation, if any.

[If it is agriculture, or any one of those mentioned in questionnaire No. 2, try to get the information on the same lines as indicated therein.]

INCOME

I. Income from the chief occupation.

A. How many *Kisans* are yours?

(*a*) In the village.
(*b*) In the neighbouring villages.
(*c*) Total number of *kisans.*

B. How many *hals* your *kisans* have?

C. How many out of the total have more than one *hal*? Give details about each individual *kisan.*

D. Total number of *hals.*

E. What is the customary rate of payment per *hal* for each *fasal* of *rabi* and *kharif*, in each of the villages in your *jijmani*? (Try to know the quantity of grain, bhusa or any other farm produce which the cultivators generally pay to him.)

F. What are the customary payments that you receive from your *kisans* on :—

(*a*) Marriages of (i) a boy, and (ii) of a girl.
(*b*) *Bidai* of (i) a daughter; (ii) home coming of a son's wife.
(*c*) Death ceremonies: (i) *dasma*, (ii) *thevim*, and (iii) *barsi*.

(*d*) *Katha.*

(*e*) Festivals. (i) *dushera,* (ii) *holi,* (iii) *divali,* and others.

(*f*) Births of (i) a boy, and (ii) a girl.

G. Were there any marriages during the year in the families of your *kisans*?

(*a*) How many?

(*b*) How many of boys and how many of girls?

Ask the following questions about each and then calculate the total income from the source.

1. What service was required of him or the members of his family?

2. For how many days?

3. Had he to give certain things? If yes, then try to get at the approximate value of those things. In this some of the following questions may help:—

(i) Who supplied the materials for the making of those things?

(ii) What was the expense incurred in securing those materials?

(iii) For how many days or hours he or some other members of the family worked at the making of those things.

(iv) Find out the prevailing rate of wages of that class of workers.

H. How much money he received.

I. How much of grain or of other things he received.

(*a*) Approximate money value of the above.

J. Did he or some of the members of his family dine.

K. How many of them, and for how many days or times? (Calculate the money value of all these.)

L. What are the parts of the year, when he is very busy doing work for hsi *kisans*?

(*a*) Calculate the number of days in the year when he is so engaged.

M. What are the usual things that he does for them?

N. Who supplies the materials?

O. If he himself, then does he charge separately for the materials or not?

P. If not, then does he get them free, or has he to buy them? If the latter, then at what rate?

Q. What quantities of the different materials did he purchase during the year?

R. How much he incurred during the year on the purchase of his materials?

S. What are the tools required for his trade?

	a.	b.	c.	d.*	
Name.	Value.	Average Life.	Depreciation per year.	Interest on a,	Total of c and d.
a.					
b.					
TOTAL.					

T. Did he purchase any tools during the year? If yes, then their names and details as above.

U. Total in money. (Representing the interest on money invested in tools, and the depreciation.)

V. How he busies himself when not working for the *kisans*.

W. What is the average income per day in money, when he is working on the job system?

X. Did the go out of the village during the slack season to earn his living? If yes, then for how many days?
   (a) Rate of wages.

Y. Total income from this source.

EXPENDITURE

For getting information leading to his family expenditure, please make use of the Questionnaire No. 2 under the heading of family expenditure.

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* Interest to be calculated at the prevailing village rate.

REVIEWS OF BOOKS

RELATING TO INDIA

Report on an Enquiry into Working Class Budgets in Bombay. By G. FINDLAY SHIRRAS, Director of the Labour Office, Government of Bombay. Bombay: Government Central Press. 1923. Price: Rs. 3-14-0.

Several independent investigators have attempted the collection of budgets of family expenditure in various parts of India; but in all cases the number has been small and the accuracy subject to a good deal of doubt. Whilst much useful work was done in local rural enquiries, the study of the industrial classes of the manufacturing towns was not commenced on a scientific basis prior to the establishment of the Labour Office by the Government of Bombay. The Report on Wages and Hours of Labour in the Cotton Mill Industry of Bombay, containing the results of an exhaustive enquiry by the Labour Office, is well known; and Mr. Findlay Shirras has put economists in India under a renewed debt of gratitude by his investigation of family expenditure in the same thorough and complete manner. These two reports, together with the monthly and annual index numbers of cost of living of the working classes in Bombay, published in the monthly organ of the Labour Office, give us a clear conception of the economic position of the working population of that city.

The method of enquiry adopted was to proceed both by the extensive and intensive methods. The extensive method involved the collection of a large number of family budgets showing the income, number and condition of the family, and expenditure on various items. The labourers being mostly illiterate, the information was collected by investigators who visited the homes of the workers many times. Indian women as well as men of good education, acquainted with industrial and child welfare work were entrusted with this work; and Honorary Correspondents of the Labour Office rendered assistance in various ways. The intensive method involved making a very detailed study of a certain number of families, and this was done mainly before the extensive investigation. This detailed work has served both for suggestion and check on the results of the extensive enquiry.

The total number of budgets collected was 3,076 and the percentage distribution, according to religion and occupations, is as follows:—

	Per cent.		Per cent.
Hindus	90.3	Mill Workers	49.5
Mahomedans	6.2	Municipal „	14.8
Christians	1.8	Dock „	12.2
Others	0.6	Railway „	8.9
No information	1.1	Engineering „	7.9
		Others „	6.7

All figures collected were subjected to a double checking; and to another examination after tabulation, doubtful figures being further investigated. The budgets were classified by income and occupation; but not in the present enquiry by religion and caste. It is noteworthy that very few families with income less than Rs. 30 per mensem were investigated and that the income group including the largest number of families was that between Rs. 40 and Rs. 50. The average size of family proved to be 4.8 persons, of whom 4.2 are resident in Bombay, and 0.6 living away from the city. An examination of the census returns for mill workers' families gave an identical figure (4.2), excluding dependents living away from home.

The results of the enquiry are set forth in summary and in detailed tables, the first giving the average expenditure on groups of items for each income group. Some tables include all the budgets, and others, selected budgets, as of husband, wife and two children. Details of expenditure are also shown by income groups. There follow a series of tables giving the results of similar enquiries in the principal countries of the world. The expenditure of single men in Bombay is also investigated in a number of income groups. Succeeding tables give a number of representative family budgets in income groups classified according to occupation. The detailed statistical tables consist of over 100 pages containing sample budgets of families and single men in various occupations. There are more than 500 sample budgets printed; and the quantities purchased as well as the expenditure on each item are shown in most cases. A fair amount of detail is given; but we should have liked to see expenditure on clothing divided between men's, women's and children's, and to have had some more of the miscellaneous items shown in detail. The difficulty of space for printing could be got over by reducing the size of the column headings; *e. g.*, the words "sample budgets" need not be printed on every page, and the indication of the income group could be relegated to the blank space at the top of the left hand column. In publishing the results of such enquiries, the aim should be to give the utmost possible detail of a large number of actual budgets; for many readers may wish to pursue special enquiries of their own on the basis of the figures.

The descriptive text gives a number of summary tables prepared on various bases, and discusses many interesting questions; such as the percentages of expenditure on different items in the different income groups, and the actual quantities of various foods consumed by 2,473 of the families. The consumption both of cereals and pulses is shown to be distinctly less than the allowance of food rations in the Bombay jail for prisoners doing light labour. In fact, the consumption of everything seems to be less than jail allowance, excepting only in the case of salt. The average amount of cereals consumed corresponds exactly with the allowance for diggers under the Bombay famine code. It should be remembered that the allowance both for jail and famine relief is simply a means of calculating a total quantity to be delivered for all prisoners, and some allowance is made for wastage and leakage.

There are some interesting paragraphs on the importance of improving the housing conditions. One table compares conditions of overcrowding in Bombay in 1921 with 1911; and shows a slight reduction of the percentage of one-room tenements in the whole, and of the number of persons per room. The percentage of one room tenements in the total number of tenements is still 70 in Bombay, as compared with 13 for London and 18 for Glasgow. The average size of rooms would also be larger in England. The importance of improved housing is adequately emphasized, and a programme of building chawls by the Bombay Development Directorate for a number of years is given. The immensity of the re-housing already accomplished and to be undertaken by various public authorities will be realized when we state that the accommodation will probably suffice for a population of 250,000. This, however, is reckoning 4 persons per room, or very nearly so, which, in itself, would be a condition of overcrowding even if the rooms were larger.

There are also very interesting paragraphs devoted to the expenditure on education, and on drink, and on the subject of indebtedness; and there is a useful summary of conclusions covering several pages. Many of the statistical results are exhibited in coloured diagrams on the columnar method and there is an interesting chart giving the variations in the cost of living month by month shown both by the methods of aggregate expenditure, and by weights according to the results of the family budget enquiry. The diagram is drawn on the logarithmic scale; and we are not sure that this is altogether proper, except for comparing changes in cost of living with changes in average earnings. It does not follow that wages vary immediately in sympathy with small changes in the cost of living; and what the labourer feels is the arithmetical difference of the increased cost above the lower cost of a few months previously. An interesting footnote on page 11 states that the average per capita income of all adults and children in the families investigated is Rs. 149-6-0 which compares with about Rs. 100 as obtained by the 1921 census for urban localities, excluding the large cities, and nearly Rs. 80 as obtained by Mr. Shirras as the average per capita income for the whole of India in 1911. The Report is full of most useful facts and inductions; and will repay most careful study.

H. S. JEVONS

The Indian Point of View in Economics. By D. A. SHAH, M. A., LL. B. Bombay: The Bombay Vaibhav Press, 1920.

"The Indian Point of View in Economics" is the title of a successful prize essay—Sir Manackji Limjee gold medal essay for 1916—written and published by Mr. D. A. Shah, M. A., LL. B., of the Bombay University. The title, though cumbrous, is yet significant. It denotes a healthy reaction against the conception of a separate Indian Political Economy or Indian Economics. Our economic organization may be different from the organisation that prevails today in western Europe. Our economic problems may not be the same as those of modern industrial communities. But if we carefully study the history of economic development in Europe or America we shall be able to find close parallels to the conditions that we find in India today. And after all, what are the new doctrines that the writers on "Indian Economics" have discovered? Are they really so distinct and revolutionary that no place can be found for them in general economic theory? Mr. Shah has reviewed the works of almost all Indian writers on economic subjects in the essay under review, but has not disclosed any new or characteristically Indian doctrine. Nor has he brought to light any special Indian point of view from which the writers on "Indian Economics" view economic doctrines, such as, for instance, the Fabians have in-

England. Nor have we been able to develop as yet any Indian school of thought in Economics, such as the Cambridge or the Austrian writers have been able to do. All that the writers of "Indian Economics" have so far done is to describe sociological conditions in India or to discuss Indian economic problems largely on mercantilistic and protectionist lines. Conditions in India have been such as not to encourage the general and scientific study of economic principles and the development of higher and abstract theory. Our problems have been so acute that they have monopolised the attention of our able men and whatever economic ideas we possess are merely the incidental results of attempts to solve them. The doctrine of "the drain", the theory of over and oppressive assessment of land revenue, the belief in the efficacy of protective tariffs, of free mints, free coinage and the gold standard are all instances to the point. Dadabhai, Digby, Dutt, Ranade, Telang, Wacha and Thakersay cannot be described as economists—they were politicians and patriots anxious to relieve poverty and to improve the condition of their suffering countrymen. They were in a hurry—and we are still in a hurry—to apply the knowledge that they possessed of economic theory to Indian Problems. That is why they did not found any school of economic thought in India. Recently Prof. Radhakamal Mukerjee has been devoting some attention to the development of economic thought in India, but it is as yet too early to judge the results of his efforts. However, it remains true that we, Indians, have as yet no place in the world of economic thought and if we are desirous of securing a place therein we must resist the temptation of becoming practical politicians, and specialise first in the science of economics. We must, moreover, pool our resources together and collect our best men at one center for constructive thinking. This is necessary, both from the point of view of the advancement of economic science as well as from the point of view of our own material development. There ought to be an Institute of Economic Research in India for thinking out schemes of economic and social reorganisation.

Mr. Shah has done well in giving us a lucid and just account, with his own discerning criticisms, of the works of Indian writers on economic subjects. A cursory reading of it has made me realise our bankruptcy in economic thinking and if it produces the same effect on other readers and goads them to make a serious and sustained effort at constructive economic thinking it will have served a very useful purpose indeed.

GURUMUKH. N. SINGH.

Social Efficiency—India's Greatest Need. By Prof. S. N. Pherwani. Bombay: the Modern Publishing Company. Pp. xv, 293. Price Rs. 2-8-.

"This book on Social Efficiency should be of service alike to the studious reader and to the practically minded citizen," is the opinion of Professor Patrick Geddes, expressed in the Introduction contributed by him to the work under consideration. Our reading of its pages leads us to declare unhesitatingly that what is said above is a well deserved tribute.

Its subject matter is divided into twenty-five chapters, the first five of which deal with the definition, aims, and the first principles of social efficiency. We are told that one characteristic, more than any other, of social efficiency will surely be to thoroughly investigate and explore the surroundings....with a view to finding out how best to approximate, transform and conserve them for socially desirable human needs present and prospective. In the next (II) chapter, therefore, a scheme of social survey is given. Here the author has emphasised that such surveys should be carried out for each homogenous region before any schemes of reconstruction are undertaken in a particular region.

After this the book changes its character from a philosophic discussion of social effciency to a realistic study of Indian conditions in terms of efficiency, and gives us some very suggestive hints as to the possible lines of socio-economic regeneration in India. Naturally enough the problem of poverty attracts our author's first attention. He emphasises its "cyclic aspect requiring individual treatment in each particular case, according to the vicious circle that has been generated". Here a number of concurrent circles in poverty by Dr. Harys are given but unfortunately what particular vicious circle is working in India, is not pointed out. Let us hope that this omission will be supplied in a subsequent edition.

In the next three chapters (VIII, IX and X) the relative supply of food, houseroom and clothing is studied, and both in their quantitative and qualitative aspects, and the general conclusion of the author is that they are inadequate. This brings him to the study of population and its vital efficiency. He quotes with approval Professor McDougal's opinion that India has a low grade population. That "as compared with their British rulers the natives of India are relatively defective in character or will-power, though intellectually they are equals." But he does not agree with him in maintaining that it is to continue the same for ever. He thinks, and perhaps rightly, that cross-breeding for variety, and nurture, may result in a progressive betterment of the Indian stock.

The next ten chapters are devoted to the study of economics of education. His discussion of the subject is very suggestive, and we recommend it to the most careful study of all educational reformers in India. Then follows a discussion on social assimiliation of divergent interests with a view to social efficiency. "The new born spirit of Nationality must be strengthened to combat the fatal spirit of caste that rules our present social arrangements," because according to Prof. MacIver "the use of nationalism is to transcend the locality and the region and to break down the mental isolation of smaller groups, their sense of alienation from one another, their feuds and prejudices, and their fierce spiritual pride, in such a way that they attach themselves to one another in a larger unity, the nation." Thus nationalism would eliminate the waste of energy and resources due to group jealousy; but what of police, pleaders and courts? About these "the social surveyor would find out facts.... and see how far by cutting short human discord the energy of human beings employed in these departments may be released for constructive work."

But "man lives not by bread alone. He needs felicity as well as food, healthy happiness as well as hard labour, fragrant flowers as well as edible vegetables." Therefore in Chapter XXII the condition of art in India is studied and some space is also devoted to the factors that help the growth of art in a country. However, the elimination of discord and the growth of art both presuppose a certain stage of human development. How to secure it is the subject matter of the following chapter. Here we get an insight into the author's ideas on religion, as well as his conception of the place of religion in the development of a nation's life. In the last chapter a programme for the realisation of the ideas of social efficiency unfolded in the book is given, in which the search for the men of genius occupies by far the most important place.

B. G. BHATNAGER.

REVIEWS OF BOOKS

ENGLISH AND FOREIGN

The Intellectual Worker and His Work. By WILLIAM MACDONALD. London: Jonathan Cape, Pp. 351. Price: *7s. 6d.*

The purpose of this book is to make a plea for the professional organization of intellectual workers. The term 'intellectual workers' is defined to include "all persons whose occupations are primarily intellectual rather than manual or physical". This is too broad a definition to indicate precisely the class of people whom the author has in view, because all work except casual labour and work of a purely repetitive kind involves the exercise of intellectual powers. Consequently, the author narrows the scope of his definition down to intellectual workers "who are not capitalists or employers or whose support is not derived from invested funds or the earnings of others; all whose work is not primarily manual, clerical, or routine; and all whose intellectual effort, whether narrow or extended, is not spent in the regular production of a material product upon whose quantity or regularity, with or without consideration of the time involved, compensation is primarily based". With this qualification, we may take it that intellectual workers, as conceived in this book, are meant to include the class of persons who are generally referred to as professional workers. The object of the book is to call attention to the importance under present conditions of professional workers organizing themselves into associations similar to trade unions.

Although the book is primarily a book with a purpose, it contains also a descriptive analysis of the nature and conditions of various forms of intellectual work in European countries and in America. The chief professions which are thus analysed in the book are those of authors, journalists, artists, dramatists and actors, teachers, research workers, civil servants, doctors, lawyers, clergymen, and engineers.

The conditions under which these various professions carry on their work and are remunerated by society are discussed in a manner which indicates considerable judgment, observation, and knowledge on the part of the author.

There are two circumstances chiefly, as the author points out, in regard to which, especially since the War, it has become a matter of urgent importance for professional workers to organize themselves. The first is that in the disorganized condition of European finance and the extreme poverty to which governments and public institutions have been reduced, the class of workers who have suffered most are the professional workers. The rise in prices has hit them hardest because their power of making demands upon society is inferior to that of classes who are engaged in the production of material wealth. The primary question with regard to intellectual workers is that of creating on the part of society an adequate sense of the importance of utilities which do not lend themselves to concrete measurement. It is the business of professional organizations to educate society to a proper appreciation of the value of non-material services.

The second factor which calls for professional organizations is the comparative lack of freedom which characterises the position of intellectual workers. The author cites various cases of intellectual workers in countries like France and the United States for whom the freedom necessary for a proper fulfilment of their functions is wanting. This is true especially in regard to university teachers for whom an essential condition of efficent service is freedom for self-expression. The real test of intellectual work is that a person is left free to express himself truly and with as much completeness as is possible for him in the work on which he is engaged.

Although it is true that intellectual workers have a great deal to gain by organizing themselves into professional associations, there is little doubt that among no class of workers is it more difficult to achieve a sense of corporateness than the workers who form the subject of this book. As the author rightly says, "each piece of product gives to the worker intellectual satisfaction not merely because it counts for a certain amount in the weekly or monthly wage but also because it is the expression of the worker himself". The distinctive feature of intellectual work is that the work attains excellence only if it honestly expresses the individuality of the worker. The exercise of individuality is so essential a characteristic of all the more important kinds of intellectual work that any attempt to bring intellectual workers even in the same line of work into a common organization must necessarily be difficult. "The one common economic bond between intellectual workers is the wage earning character of their labour". But that apparently is the only bond, and because this bond refers to an incidental rather than an essential part of intellectual work, as distinguished from other forms of work, it must be difficult to make the existence of that bond sufficiently real to the workers. The intellectual worker must get his wages like other workers, but other workers can consciously work for a wage and yet not spoil the quality of their work. But an intellectual worker who makes his wages the conscious aim of his work cannot long maintain the quality of his work.

JOHN MATTHAI

The Background of Economics. By PROFESSORS MARLIN H. HUNTER and GORDON S. WATKINS of the University of Illinois. New York and London : McGraw Hill Book Company.

The purpose of this book is set forth in these words in the Preface: "Many students begin their study of the Principles of Economics just as they do the study of Chemistry or Mathemetics; namely, as an abstract science with no particular relation to the knowledge which they have already acquired and the experiences through which they have passed. There is an urgent need to develop in the student the point of view that Economics deals with the world in which he lives, and that the principles of this science can and should be tested by observation, analysis, and experience. It is with this conviction that the authors have written the present volume."

In going through the book one realises that the industrious and painstaking authors have very eminently succeeded in their objective. The wealth of illustrations that they have supplied in enunciating and expounding the familiar laws in Economics is both impressive and helpful, particularly those provided in Parts III & V; and as such the book thoroughly deserves the title that has been given it—" The Background of Economics."

Written for American students the illustrations are naturally drawn from American environments and American conditions of agriculture, industry and trade. Yet we feel that Indian students, and for the matter of that Indian teachers of Economics too, will find the book not unhelpful. Indeed, we feel that for teachers it would be particularly useful. It will inform teachers of the modern tendency in the teaching of Economics that is more and more making itself felt. This tendency is to relate and to link in a causal chain of reasoning the common place and every-day facts of life to the exposition and understanding of the abstract Principles of Economics.

Further, we feel that this book may prove useful to teachers of

Economics in this country in so far as it may stimulate them, or at least some of them, to produce works of similar character for the use of our students. There is a great need of such works. Will the supply be forthcoming?

The book is written in plain and simple English and is easy of reading and understanding. It could be used by the Intermediate and even the first year men of our Universities with much profit. In fact the book was written in response to a demand for a text that would bridge the gap between high school courses in social science and college courses in the Principles of Economics.

The book is divided into the following eight parts: Part I deals with Man and Society; Part II with the forces of Nature, and Climatic factors like Heat and Light, winds and Rainfall, and Topography and Soils; Part III treats of the Products of Nature, and such things as Fish & Game, Fruits and Vegetables are not excluded amongst the other great staple products of Nature; Part IV treats of Agriculture, and would be useful in the points of contrast that are called up, or rather, the points of similarity that we would find to our own great industry of agriculture in this country; Part V treats of Manufacturing Industries; Part VI of the Problems of Industry; Part VII of Exchange, and finally the book ends with a suggestive and useful part entitled "Government and Economic Relations."

S. K. R.

Back to Prosperity—by Henry Lowenfield and Margaret Lowenfield. London: Effingham Wilson. 1923.

This little book of about 280 pages is a bold attempt to reconstruct the entire monetary system of the country on an entirely new basis. The main features of the new monetary system proposed by the authors may be indicated briefly in their own words as far as possible. The present monetary system having failed completely any improvement must be based on two primary conditions viz:—

(1) The new measure of value must be an instrument "which contains in itself not only everything which it measures but also those inevitable changes which are inseparable from practical life and which alter the things measured."

(2) Further, "this instrument must be one over which we cannot possibly have any direct control, but on the other hand, is guaranteed with absolute safety in somewhat the same manner as a mortgage or charge upon property secures a hold upon it."

Thus the outward form or expression of money is wholly immaterial: what really matters is the goods' backing which follows money while in circulation as a shadow follows and is inseparable from a man. Thus every coin has its own shadow and as long as that shadow expresses anything and everything which exists including all the possible changes which can take place in all those things which money can be called upon to measure, then and only then will money ensure stability and give us every time we use it as good value as we gave.

Thus the author's propose to measure everything by a new common denominator which includes everything in itself and not, as hitherto, by one single factor. Metal discs and printed notes will be prepared and lent to a buyer of goods who gives in exchange full security and undertakes to return them at an early date. This buyer is authorised to pass them on as legal tender money when they leave his hands. In this way, notes and coins will go into circulation. When the buyer wants to fulfil his obligation and return them, he can only obtain them by giving in his turn full goods value for them. In this way, these goods which are the shadow of the money go out of existence along with the money itself. In this way notes and coins go out of circulation.

To carry out this somewhat vast scheme properly, a new corporation or a reconstruction of the existing Banks of issue would be necessary. The main object of the new corporation would be the manufacture and circulation of the new legal tender money. It will also fix the official rate of discount and help generally the development of trade and commerce in the country. The Government will concede to it the sole right of issuing such legal tender money under strict official supervision. In its constitution, the principle of mutual insurance companies will be adopted so that while the liability of each member is determined, yet all the members jointly guarantee the acts of the corporation. 'Every bank in the country shall be ipso facto a member of the corporation—and, what is very important—the profession of banking shall be by law reserved exclusively to members of the corporation whenever it includes the acceptance of general deposits and the opening of accounts worked by cheques. Thus one important effect of the authors' plan will be that banking will pass into the hands of a close monopoly. The corporation shall issue the legal tender money and discount approved bills with its own money and the subsequent resale of these bills shall be transacted exclusively by the corporation with its own members. It shall discount only real first-class trade-bills which are:—

(i) directly the result of purchases and sales of real commodities;

(ii) drawn and accepted by traders of established reputations; and

(iii) endorsed by the member of the corporation who presents them for discount.

This discounting of bills shall be the way by which the legal tender money shall be put into circulation. By this means the money issued by the corporation will be money when bills are discounted and will cease to be money when they mature or are resold. Thus the total amount of money in circulation will invariably be equal to the total money value of bills in the hands of the corporation. No alteration in the size, shape or kind of the existing circulating medium of the country is proposed and in fact although gold will be eliminated from our measure of value, it can still continue in circulation—not as a measure of value but as a form of money. The intrinsic value of the coins will be less than their money value so that after the coins have been used for sometime they will have paid for themselves. Consequently the capital needed for the corporation will be very small.

These are the main features of the new scheme which the authors put forth. It is impossible to discuss them in greater detail within the limits of a short review. The great advantage of the new system will be that the amount of ready cash available for discounting first class trade bills will always be adequate—a fact which will greatly assist, develop and stabilise business throughout the country. The amount of money in circulation will automatically expand or contract according to the needs of trade, while in use the money will have its full counter weight in goods on the market and will therefore not interfere with prices of commodities.

The scheme is not quite novel because such suggestions to stabilise the monetary unit on lines similar to the above have been made from time to time. But the scheme is certainly bold and requires a lot of imagination and courage to carry it through. Schemes like this require a lot of consideration in all parts of the world and we are indeed grateful to the authors for putting such an extremely complicated subject in such an easy way, so that the man who runs may read and reading understand. We congratulate the authors on this brilliant treatise. However, we very much regret the want of an index.

B. MUKHERJEE.

The Oil Trusts and Anglo-American Relations. By E. H. DAVENPORT and SIDNEY RUSSELL COOKE. London: Macmillan and Co. 1923. Pp. 272. Price: 7s. 6d.

Messrs. Davenport and Cooke have presented in this volume a very interesting and insofar as one who knows little about the situation can judge, a fair and unbiassed account of the oil policies of the British and American Governments and the bearing of "oil" upon the international conferences of the last three years. The authors first treat of "Great Britain and Oil Power," from Lord Fisher's and Mr. Winston Churchill's oil policies to the "war accentuation", the national oil policy after the war, and the San Remo Agreement. They then take up the American "viewpoint," the policies and influence of Standard Oil, the shortage scare and closed door, and President Wilson's and President Harding's diplomatic attempts to secure better opportunities for American citizens in the exploitation of the world's oil resources. After relating the story of the international conferences (Genoa, the Hague and Lausanne), the book closes with four chapters on the political principles involved.

The history given by Messrs. Davenport and Cooke differs in many respects from that gathered from the newspaper accounts of the past few years, but the authors seem to know the facts, and anyone who wishes to know the real influence of "oil" on recent world politics should by no means neglect to read their account. Here we can only quote their conclusion, with which we find it difficult to disagree after reading their presentation of the situation. "There is really no half-way position that is tenable between a thorough international control of oil production, with its concomitant of internationalized zones where oilfields or oil pipe-lines lie situate in unsettled territory and of an international pro-rating of expenditure and profit, or a thorough freedom of competition between privately owned oil companies. The first is hardly practicable, seeing that Americans would undoubtedly refuse to apply the principle to their own fields; while the second is already in existence and can quite easily be perfected if a few sane principles are adopted internationally. No one will dispute....that international co-operation is needed for the proper development of the world's oil resources; but surely that co-operation should take the form of enforcing universally the principle of the "open door," not of tearing up existing legal rights. Let America and Britain come together on this basis, let them agree that it is unwise the one to hold Standard Oil views and the other to hold Anglo-Persian shares, and they will do much to eliminate....this element of disturbance to the world's peace."

C. A. W.

Economics of the Household. By BENJAMIN R. ANDREWS, Ph. D., Associate Professor of Household Economics, Teachers College, Columbia University. New York: The Macmillan Company. 1923. Pp. vii, 623.

The "household" studied in this book is the "American household", and from cover to cover the book is essentially American. In some sixteen chapters we find amongst the chief subjects treated:—The Income of the Household; its Expenditure; its Capital and Savings; its Investments; Housing; Food; Clothing; and then are three chapters on Household Operation. An Appendix of about fifty pages contains Questions and Problems in Household Economics.

We have seldom gone through a more disappointing book. In the first place to be made readable it almost requires to be rewritten. The English throughout the book is abominable; there is hardly a page where something is not encountered which either blocks progress or grates upon the nerves. Take this from the first page of the Preface, the part of a book that an author usually prepares with more than ordinary care. "The American household as its social ideal takes form is an institution in which two adults form a partnership...." On the same page we encounter this:—"As members of a social group *that cares*, the family supports each member...." (The italics are ours). Or let us take two more from another page, (p. 574). "Is reading aloud *a better consumption* than silent reading?" The following occurs a few lines lower down:—"Why are not meals made with one or two kinds of food only, and feasts with the same materials, save in unlimited quantities."

Time and again we run across passages which seem, if not stupid, at least silly, and, if not silly, at least platitudinous. "Cleaning the House" occurs in the index and is represented by two pages.

Here is what we find:—"House cleaning is the problem of disposing of foreign material, which has made its way into the house. The character of this material is determined partly by the street soil which has been blown in, tracked in, or brought in on garments.... Even the occupants of the household disintegrate as it were and particles of epidermis, for example, add to household debris...." The character of the material dealt with, and the manner of treatment, seem to us well indicated by the questions set as arising out of the different chapters. "What causes sickness? Is it avoidable?" (p. 604). 'The grand-mother in the home'. Outline the services rendered". (p. 602). " Canvass class opinion: Should a student's dress be renewed seasonally, or selected of fabric and mode making possible longer wear....", (p. 590). Or take this:—" Show that the following are economic problems of the home· a servant scrubbing out a kitchen at 9 p. m.; a death from tuberculosis; shoe soles worn through in five weeks. List other household economic problems."

Whenever we get into contact with what are more normally considered economic problems the treatment is weak. " Distinguish between normal price and a temporary market price. What *seems to* control the former?" (The italics are ours). Let us give one last example, for we are wasting valuable space on a book that is not worth it:—"'Money measures life.' How far true? Do you prefer statement: 'Use of money measures life?' Is this an adequate measure of the household? What does it fail to take account of?" (p. 573).

The book is offered " as a text-book in colleges and other higher institutions and as a reference book in schools." (Preface). Where it is introduced the students have our sympathy, and our only ground for rejoicing is that the book is so essentially American that no college or school in India can be so misguided as to suggest its inclusion in their curricula.

W. H. MYLES.

Practical Economics. By HENRY P. SHEARMAN. New York: McGraw-Hill Book Company, Inc. 1922. Pp. 388

This is the best text-book on Economics that we have thus far come across. It has been prepared with the object of meeting (Preface V) " the insistent demand for a simpler and more concrete statement of economic theory than is usually found in the standard works." This aim is, we unhesitatingly say, fully achieved. The book is couched in simple, clear and effective language. It states and explains the general principles of economics with special reference to the industrial conditions of the United States today. It goes beyond this, and points out the practical consequences of these principles so that the touch between theory and practice is never lost. The illustrations are garnered from actual industrial facts and are interesting and stimulating. The charts, schedules and graphs are clear and fully explanatory. As one turns over the pages of the book and lights on these illustrations and graphs one finds the tedium of going through a more or less mere exposition of theory, common in most books, greatly reduced and many an actual economic phenomenon lucidly explained which otherwise could not have been properly grasped. The value of the book is greatly enhanced by the inclusion at the end of each chapter of a number of questions bearing on the topics discussed therein and a list of references.

The book is divided into four parts. Part I is explanatory and introductory. It deals with the scope and methods and the nature and importance of the science of economics. The author's conception of the science of economics is rather wide. We will let the author speak on the point. "Economics studies business institutions and activities not solely in relation to individual or class interests, but in their bearing on the interest of the nation at large. It stands as the champion of the economic welfare of the people as a whole."

Part II. This concerns itself with a study of the four factors of production, land, labour, capital and organization,—their nature and the causes of their efficiency. The place of land, i. e., nature, and of labour, i. e., man, and their relative importance and inter-relation in production are clearly and forcibly pointed out. Soil being the most important of all natural resources, it has been assigned its proper place by saying: "On it man depends for food and raiment. On the produce of land all industry is based." With regard to man it is pointed out that (page 31) "Man is the alpha and omega of economic activity." The inter-relation of nature and man is brought out thus: "While nature lays the foundation for production it remains for man to erect the building." At another place (page 41), it is emphatically stated that "the source of national, as of individual, wealth lies not in material possessions, but in mental forces...., strip the productive process to the waist, and man remains as its final cause, as its primary dynamic agent." Similarly capital and organization as factors in production are fully explained and in view of the increasingly large part played by the latter in modern business a larger space has been alloted to it than has been customary and its essentials are plainly analysed.

Part III. This discusses exchange, values and prices and is as satisfactory and illuminating as its predecessor. The laws of demand and supply, the forces behind demand and supply, the formation of total demand and total supply and the inter-action of marginal demand and marginal supply are lucidly given and explained by means of graphs and schedules. One departure, if it can be called by that name, from the marginal utitity theory of value as commonly explained is introduced in so far as influence of money utility on commodity utility in determining individual demand, is not neglected as is generally done, but properly emphasised. It is admitted (page 152) that "the utility of the commodity, the power it possesses to command desire, is the positive and more active factor," "but," it is said "to ignore the utility of money, the power it possesses to command desire, and influence the decision of the buyer is to ignore one of the factors of the case and result in a one-sided theory of value." It may, however, he said for those economists whose treatment of this theory of value is criticised that they always have in mind the part which money utility plays in determining individual demand, only they do not make it so prominent as the author has done.

Part IV. This is concerned with distribution—"an analysis of the four forms of income through which all wealth produced is distributed and the factors determining their amounts." The chapters on rent and interest are excellent. So are the two chapters on wages in so far as an analysis of the factors influencing wages on the demand as well as on the supply side goes. But one could have wished that the limits set to wages by productivity and cost of production of labour should have been pointed out. We admit that there cannot be a general rate of wages as there is not a general rate of interest, but limits to a rise or fall of wages there are and these should have been explained. We are glad to note that a clear analysis of the influence of the standard of living on wages is given. It is said (page 342-3): "The standard of living exerts a dual influence on wages; first by restraining the growth of population as a whole or in the case of a particular class by tending to limit the supply of labour. Second..it influences the bargaining power of workers by stiffening their backs against a reduction in wages below that which they consider essential to maintain them in their accustomed mode of living." But one fails to see the obverse influence of wages on the standard of living, which is no less important.

Lastly, as to profit which has been defined as (page 369) the share paid to the owners of business unit or organization for the part it plays in the production of the joint product, or (the same page), it is "the share of the joint product assigned to it (organization) for the service it renders." This is not in accordance with the theory of profits which understands by profits the surplus over and above the wages of management—normal profits as some prefer to call it. Wages of management, which the author takes profits to be, could be explained by the ordinary theory of wages. What a theory of profits should explain is the cause and nature of the surplus above noted. Of this the author says nothing. Carver does it very well when he attributes it to the superior bargaining powers of the organisers which enables them to pay less to the other factors of production than their marginal productivity, or to cheatings practised on the consumers or to windfalls.

G. F. K.

CURRENT NOTES

OURSELVES

In accordance with the announcement made to our subscribers, this issue of the *Indian Journal of Economics* completes its fourth volume. The decision made a year ago, to issue the *Indian Journal of Economics* three times a year instead of quarterly, was made reluctantly, but it seemed doubtful that sufficient material would be forthcoming and that the editorial board could arrange to publish four issues. It has become apparent, however, that it is practicable to make the Journal a quarterly. The next volume will therefore begin with an issue in July next, the other three parts being published in October, January and April. Naturally it will be necessary to restore the subscription rate to Rs. 12 per volume. Will our subscribers please renew their subscriptions promptly, using the enclosed forms?

Our leading articles in this issue deal with two of the foremost problems connected with industrial development in India. Dr. P. P. Pillai, who writes on "The Financing of Indian Industry," has recently taken a position with the Economic Section of the League of Nations Secretariat at Geneva. We are confident that our readers will welcome further contributions from him, which he has, in fact, promised us. Mr. A. Ramaiya, who writes on "Protection to the Indian Steel Industry," is a Vakil in Madura, South India, who takes a keen interest in economic questions and who has organized the Fiscal Reform League in Madura.

In view of the controversial nature of the protective tariff and its application to the Indian steel industry we should have been pleased to publish an article on each side of the question. As yet, however, no one has offered to contribute an article in favour of the protective tariff. Mr. Ramaiya seems to favor bounties rather than a protective tariff. In this connection it must be remembered that bounties also have to be paid out of taxation. Any form of state aid costs something, though it might be just possible that taxes might be arranged so as to fall on luxuries rather than essential industries. With regard to labor and technical knowledge, it must be remembered that these cannot increase unless there is a field for their employment. The coal difficulty, too, is probably over-emphasized in Mr. Ramaiya's article.

It is our intention in the forthcoming volume to publish a larger number and a greater variety of articles than we have done in this volume. Among those which our readers may expect are the following: a village survey and some notes on the civic survey of Allahabad by Mr. Jagannath Prasad; "The Teaching of Economics," by Professor Thompson; "The Religious Base in Indian Economy," by Mr. Bhatnager; and the final chapter of the "Art of

Economic Development," by Professor Jevons. Professor Burnett-Hurst has also promised a series of articles and Mr. Warburton will continue his series on distribution. Many others have promised articles the subjects of which, however, we are unable to announce at present.

We should like to increase the size of each issue, both by reducing the size of type and by increasing the number of pages. Just at present, however, our financial status will not permit enlargement; for as we said in a recent issue, we have no subsidy from University or other funds, and our subscriptions are our only source of income. If our present subscribers will each recommend the *Indian Journal of Economics* to others and each obtain one new subscription we can easily carry out our plans for enlargement. Will you do it?

We regret the error in our October issue by which the name of Professor Fetter was linked with that of Professor Davenport as an exponent of "price economics." Professor Fetter is one of those who has protested against this view of economics. (See his article entitled "Price Economics vs. Welfare Economics in the American Economic Review for 1920, pages 467 and 719).

ECONOMIC CONFERENCES.

The Indian Economic Association met for its annual Conference in Bombay from the 22nd to the 25th of January. Many very interesting papers were read, followed by equally interesting discussions. Among the topics were the following: the tariff, protection and imperial economic relations; currency and the Gold Exchange Standard; non-credit agricultural and distributive co-operative societies; poor relief, housing and population; agricultural improvements and development; India's balance of trade; indigenous banking, excise policy and the supply of labour in South India; methods of teaching economics and the trend of Indian thought in economics.

During the same week there was held at Victoria Hall, Gwalior, a somewhat similar conference, under the auspices of the Victoria College Economics Society and the Collegians Lashkar, called "The Economic Week." We have not seen copies of any of the papers read there, but reports indicate that a large variety of subjects were ably discussed by students, professors and leading citizens, and that a great interest was created both among students and the general public. Professor Vajpayee is to be congratulated on his initiative and interest in promoting and carrying through such a program.

ECONOMIC SURVEYS.

On the 4th February the following resolution was moved in the Council of State:

"This Council recommends to the Governor-General in Council that a Committee consisting of a majority of non-official Indians be appointed to make a full and detailed survey of the economic conditions of the people of

India with special reference to the condition of the agricultural population, with a view to finding out the average annual income per head of the population particularly of the agricultural population, and to inquire into and report on the measures that should be adopted to reduce, as far as possible, the existing destitution and poverty in the country and to raise the average economic level of the masses of the people."

This resolution was amended and passed as follows:

"That this Council recommends to the Governor-General in Council that the Local Governments may be consulted with regard to the desirability of undertaking an inquiry into the general economic conditions of British India and whether they are prepared to support the proposal to appoint a Committee and to co-operate in its labours if appointed."

The need for such an inquiry cannot be overemphasized. We do not believe, however, that this need can adequately be met by an economic survey conducted under Government auspices. In the first place, such a survey would furnish facts about the economic condition of India only at the present time. It would not give the necessary information for determining changes from time to time in economic welfare. We believe the latter to be the more important. The price indices, cost-of-living index, and wage indices which the Bombay Labour Office are maintaining are of no less importance than their report on working class budgets. The results of such a survey as is contemplated in the Council of State resolution would be of little use after five years. In the second place, an inquiry like that contemplated requires the building up of an office force and an organisation suited to the handling of vast amounts of data and to the making of extensive statistical computations. It is not easy in India, where trained investigators and statisticians can almost be counted on one's fingers, to gather together a suitable staff for temporary employment only. To collect a suitable number of family budgets over all parts of India would be far more expensive (per 1,000 budgets collected) that it was for the Bombay Labour Office with its trained and permanent investigators.

For these reasons we believe that what is required is something in the nature of permanent bureaus in each of the provinces similar to the Labour Office in Bombay. In other provinces the "labour" aspect need not be emphasized so strongly; and it would probably be more suitable to call such offices Bureaus of Economic Statistics. These could carry on such statistical services as the Bombay Labour Office, and also gather statistics concerning agricultural and industrial production, banking statistics, movements of commodities, and many other statistics, a knowledge of which is essential to the control of economic conditions so as to "reduce, so far as possible, the existing destitution and poverty in the country and to raise the average economic level of the masses of the people."

Besides such provincial bureaus for collecting and publishing economic statistics in the provinces, there would need to be an office of the Government of India for the co-ordination of the provincial statistics, to assist in securing similarity of methods and comparability of results, and to combine the provincial statistics into all-India statistics.

This, it seems to us, is the proper part for the Government to take in this matter. There is a great need also for one or more privately endowed economic research institutes, having no connection with Government. So great is this need that we wish to repeat here what we said in our issue of October last. " It (an Economic Research Institute) could investigate with more care and more freedom than Government departments and with more thoroughness than university professors problems such as the distribution of income among the people, the effects of irrigation projects and railway extensions, the economic aspects of the cattle problem, the problem of an adequate food supply, the economic results of the political relation between India and England, the economic history of India, the alleviation and prevention of famines, the relation between industrial activity and rural prosperity, and the possibilities of the distribution to villages of electric power and its utilization in cottage industries."

C. A. W.

RECENT PERIODICALS

ENGLISH AND AMERICAN

THE JOURNAL OF POLTICAL ECONOMY

DEEEMBER 1923

German Taxatian Policy in the World-War. By R. R. Kuczynski.
Value and the Larger Economics. II. By Frank A. Fetter.
Sixteenth-Century Religious Thought. III. By R. H. Tawney.
German Commerce in the Middle Ages. By J. Wesley Hoffmann.

FEBRUARY 1924

Prime Costs in the Business Cycle. By Alvin H. Hansen.
Central Co-operative Banking in Russia. By Eugene M. Kayden.
Rate-making for Public Utilities. By C. O. Ruggles.
"Socialization" in Germany. By Emil Frankel.

JOURNAL OF THE EAST INDIA ASSOCIATION

JANUARY 1924

India's Working Classes and Their Problems. By K. C. Ray Chowdhry.
The Future Development of Indian Industries. By Sir Charles Low.

GARDEN CITIES AND TOWN PLANNING

JANUARY 1924 (Special Indian Number)

The Indian Village. By Ramakanta.
Delhi, The Imperial City. By T. Salkield.
Town-Planning in Madras. By R. Dann.

RECENT PERIODICALS

INDIAN

THE CALCUTTA REVIEW

JANUARY 1924

Foreign Exchange in Indian Banks. By H. Sinha.

FEBRUARY 1924

Economic Evolution of India. By P. P. Pillai.

THE MODERN REVIEW

JANUARY 1924, FEBRUARY 1924, and MARCH 1924

The Indian Cotton Industry (about A. D. 1700). By P. T. Thomas.

	30th September 1923	31st October 1923	30th November 1923

ABSTRACTS OF THE ACCOUNTS OF THE DEPARTMENT OF ISSUE OF PAPER CURRENCY
Lakhs of Rupees

	30th September 1923	31st October 1923	30th November 1923
Total amount of notes in circulation.	1,79,29	1,80,82	1,78,30
RESERVE			
Coin and Bullion (*In India*) Silver Coin	92,66	93,48	89,88
Gold coin and Bullion ..	24,32	24,32	22,32
Silver Bullion under Coinage ..	4,83	5,54	5,62
Securities (*at purchase price*)			
Held in India	57,48	57,48	57,48
Held in England			
Internal Bills of Exchange ..			3,00
Total ..	1,79,29	1,80,82	1,78,30

BALANCE OF THE GOLD STANDARD RESERVE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH

	30th September 1923	31st October 1923	30th November 1923
Gold in India ..			
Cash at the Bank of England	221	4,713	1,507
British Securities (*value as of 30th September 1923*) ..	39,999,779	31,869,056	24,486,224
Securities since purchased		8,206,326	15,612,352
Total	40,000,000	40,080,095	40,100,083

BALANCE HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE IMPERIAL BANK AND ITS BRANCHES——BANK RATES——EXCHANGE——SILVER, ETC.

	30th September 1923	31st October 1923	30th November 1923
Treasury Balances (*thousands of rupees*). ..	19,06,81	10,94,38	11,55,53
Bank Rates (per cent) ..			
Imperial Bank of India ..	4	4	6
Bank of England ..	4	4	4
Exchange Rates (S.d.)			
On Demand	1 4 7/32	1 4 25/32	1 5 1/4
Telegraphic Transfer ..	1 4 3/16	1 4 ¾	1 5 7/32
3 Months'	1 4 7/16	1 5	1 5½
6 Months'	1 4 11/16	1 5 ¼	1 5¾
Government Paper (3½ p c.) ..	65 3/8	62 ¾	62 3/16
Bar Silver in London (pence) ..	31 15/16	31 ⅞	33 7/16

31st December 1923	31st January 1924	29th February 1924
ABSTRACTS OF THE ACCOUNTS OF THE DEPARTMENT OF ISSUE OF PAPER CURRENCY *Lakhs of Rupees*		
1,83,41	1,84,02	1,86,19
80,97	76,49	74,64
22,32	22,32	22,32
5,64	5,69	5,70
57,48	57,52	57,53
9,00	14,00	14,00
8,00	8,00	12,00
1,83,41	1,84,02	1,86,19
BALANCE OF THE GOLD STANDARD RESERVE IN INDIA AND IN ENGLAND ON THE LAST DAY OF EACH MONTH		
4,746	715	291,882
13,545,166	12,407,956	9,702,046
26,628,310	27,812,030	30,727,152
40,178,222	40,220,701	40,421,082
BALANCE HELD IN CASH IN THE GOVERNMENT CIVIL TREASURIES AND AT CREDIT OF GOVERNMENT IN THE IMPERIAL BANK AND ITS BRANCHES—BANK RATES—EXCHANGE—SILVER, ETC.		
11,64,04	20,20,47	25,78,21
7	8	9
4	4	4
1 5 1/4	1 5 3/16	1 4 5/8
1 5 7/32	1 5 5/32	1 4 19/32
1 5 5/32	1 5 13/32	1 4 13/16
1 5 23/32	1 5 7/16	1 5 1/16
63 1/4	65 3/16	66 3/8
33 7/16	33 5/16	

DIRECTORY OF ECONOMISTS IN INDIA

The following list is published in correction of the "Directory of Economists in India" published in our last issue.

BOMBAY UNIVERSITY

H. L. Chablani, M. A.,
Professor of History and Political Economy,
Elphinstone College, Bombay.

Avertano Correia-Fernandes, M. A.,
Professor of History and Economics,
St. Xavier's College, Bombay.

Shapursha Hormusji Hodiwala, M.A.,
Principal, Professor of English,
History and Political Economy,
Bahauddin College, Junagadh.

Vyomeshchandra Janardan Pathakji, M.A.,
Professor of History & Economics,
M. T. B. Arts College, Surat.

Parashuram Mahdeo Limaye, M. A.,
Professor of History and Economics,
Willingdon College, Sangli.

PUNJAB UNIVERSITY

Lala Shiv Dayal, M. A.,
Assist. Prof. of English and Economics,
Government College, Lahore.

Mulk Raj Kohli M. A.,
Professor of Economics,
Mohindra College, Patiala.

Sardar Pritam Singh, M. A.,
Professor of Economics,
Gordon College, Rawalpindi.

L. Kunden Lal, M. A.,
Professor of Economics,
Edwardes College, Peshawar.

R. Amarnath Bali, M. A.,
Professor of Economics,
D. A. V. College, Lahore.

Pd. J. S. Guleri, M. A.,
Assist. Professor of Economics,
Punjab Agricultural College,
Lyallpur.

Henry Martin, M. A.,
Professor of Economics,
Islamia College, Peshawar.

ALLAHABAD UNIVERSITY

J. T. Goodchild, M. A.,
Professor of Economics,
St. John's College, Agra.

NOT CONNECTED WITH THE UNIVERSITIES

W. J. Herridge Esq.,
Investigator,
Labour Office, Bombay.

N. A. Mehrban Esq.,
Investigator,
Labour Office, Bombay.

Vaikunth L. Mehta,
Editor, Bombay Co-operative Quarterly,
Fort, Bombay.

BOOKS RECEIVED

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